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Analysis of integration of sustainability in sustainability certifications in the hotel industry

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There is a worldwide consensus that sustainability is the main basis for the recovery of tourism. In this context, tools and standards play an important role to facilitate the integration of the principles of sustainable tourism in practice. Within the tourism sector, the hotel industry is one of the key industries with a high growth rate. The main objective is to carry out an analysis based on the concept of sustainability in the sustainability certifications of the hotel industry, delving into those certifications adopted by the large hotel companies. For this purpose, a comparative analysis of the certification criteria is carried out using as a basis the World Sustainable Tourism Council (GSTC). This article evidences the primacy of the environmental dimension and establishes recommendations that guide holistic and integrated sustainability strategies from a comprehensive perspective that allow the recovery of tourism in general and the sustainable hotel industry in particular.

KEYWORDS

sustainable tourism, sustainable hotel, hotel industry, sustainability certifications, sustainability criteria

1. Introduction

At the global level, travel and tourism is the main economic sector and the major GDP and employment contributor for several countries, which represents more than 10% in global GDP and global employment (WTTC, 2021). In the recent years, tourism and COVID-19 are the epicenter of all international discussions and economies (Sigala, 2020). COVID-19 has caused an enormous and international economic impact, in particular, a loss of US\$ 1.2 trillion in export revenues from tourism and 120 million direct tourism job, as well as it has originated the largest decline in the history (UNWTO, 2020). According to UNWTO (2020), the unique position for its recovery should be based on the concept of sustainability. Therefore, sustainability is understood as a cornerstone for the responsible recovery of the tourism sector. The recovery of the sector should build on the UNWTO Global Guidelines to Restart Tourism, with the aim to emerge stronger and more sustainable from the COVID-19 crisis (UNWTO, 2020). In fact, companies that have overcome the pandemic should integrate the sustainability in their activities to create products more resilient to future pandemics, as well as meeting the greater demand for sustainable products (Lew, 2020).

In this context, the principles of sustainable tourism (*Sustainable Tourism for Development Guidebook*, 2013) are mainly based on three aspects. First, make proper use of natural resources, maintaining essential ecological processes and helping to preserve natural heritage and biodiversity. Second, to respect the sociocultural authenticity of the communities receiving tourism, preserving the cultural heritage, traditional values and contributing to understanding and tolerance between cultures. Third, to ensure economically viable and lasting operations, facilitating socioeconomic benefits to all stakeholders, including stable employment and opportunities for economic growth, as well as social services to local communities, helping to reduce poverty. Therefore, given the impact of the tourism in the three dimensions, it is important that the development of the tourism sector addresses all the dimensions of the sustainability from a holistic perspective (*Streimikiene et al.*, 2021). Additionally, the sustainability also has a substantial impact on destination branding (*Buhalis and Park*, 2021).

Sustainable tourism development requires the involvement of all stakeholders, including academia, and strong political leadership to ensure broad participation and consensus among the parties, becoming the sustainability a key concept for the future of tourism governance (*Paunovic et al.*, 2020). It is a continuous process that requires constant control of impacts, introducing both preventive and corrective measures that may be necessary. In this context, the academia should promote tools and standards that facilitate the integration of the principles of sustainable tourism in practice (*UNEP and UNWTO*, 2005).

Within the tourism sector, the hotel industry is one of the key industries with a high growth rate. Similarly, the hotel industry imposes numerous impacts on the natural, social, and economic environment, contributing to climate change, noise and environmental pollution, loss of biodiversity, waste generation, among other environmental, economic and social issues (*De Grosbois*, 2012). Faced with this situation, hotels must develop strategies that allow them to manage their impacts, taking advantage of operational, administrative, and financial resources and, at the same time, they must be able to respond to the demands of the stakeholders (*Dos Santos et al.*, 2017). These strategies are known as sustainable strategies, understanding the concept of sustainability as those voluntary activities that demonstrate the integration of social and environmental concerns in the operations of companies, as well as in their interactions with stakeholders (*Van Marrewijk*, 2003). In addition, sustainability concept has been addressed in the literature under the holistic perspective, which requires equilibria among economic, environmental, and social aspects in the short, long- and longer-term effects of their operations (*Lozano*, 2008, 2015; *Muñoz-Torres et al.*, 2018).

In the specific case of hotel companies, different studies indicate that more and more these companies are engaged in activities related to sustainability and communicate their efforts in this matter to their guests, and to the public (*De Grosbois*, 2012). Moreover, they show concern for managing the negative impact that their operations may cause to society or the environment. This growing trend is mainly explained by strong competition in the sector, exigent customer demand, and reputation management and brand protection (*Brown et al.*, 2009). Additionally, both

international organizations and the academic world (*Buhalis and Costa*, 2006) have promoted sustainable management through guidelines and proposals for management tools. All these factors have led to the proliferation of many certifications on issues related to sustainability management in the hotel industry (*Font and Harris*, 2004; *Font et al.*, 2007; *Haaland and Aas*, 2010; *Jarvis et al.*, 2010; *Buckley*, 2013; *Dunk et al.*, 2016; *Margaryan and Stensland*, 2017; *Martínez et al.*, 2019).

These sustainability certifications serve as viable instruments to help mitigate the negative impact of certified companies, but also to favor a positive impact (*Prakash and Potoski*, 2007; *Martínez et al.*, 2019). Certifications have been the object of study on many occasions (*Font and Buckley*, 2001; *Font et al.*, 2007; *Esparon et al.*, 2014; *Bianco et al.*, 2023) both from the perspective of the consumer and the company (*Aguilar and Vlosky*, 2007; *Rowe and Higham*, 2007; *Esparon*, 2013; *Esparon et al.*, 2014). Certifications emphasize performance in the economic areas and hotel market value (*Bilbao-Terol and Bilbao-Terol*, 2020; *Bernard and Nicolau*, 2022) and areas of people, planet and profit (*Melo and Wolf*, 2005; *Esparon et al.*, 2014), and ensure that certified companies meet sustainability standards. In this way, certifications are understood as a mean to the commitment of a company toward sustainability (*Battaglia*, 2017), at the same time, that help consumers to identify “responsible” companies (*Chamorro and Banegil*, 2006; *Esparon et al.*, 2014). In addition, in the context of COVID-19, sustainability certifications have been evidenced as mediators in the relationship between CSR strategies and hotel resilience (*Marco-Lajara et al.*, 2022).

Most articles have been studied from the point of view of how having a certification influences on performance, or on expectations of consumers, even the relation with hotel business and the sustainability from a holistic and integrated perspective (*Dos Santos et al.*, 2017; *Spenceley*, 2019; *Bianco et al.*, 2023). Furthermore, *Dos Santos et al.* (2017) considers that managers of hotels are capable of aligning their strategic analysis to economic, environmental, social, political and cultural dimensions, i.e., to a holistic concept of sustainability (*Dos Santos et al.*, 2017). However, as far as we know, the concept of sustainability adopted by the sustainable hotel certifications and what aspects of sustainability they include have not been analyzed. Given the signaling purpose (with a specific logo) that represents the sustainable certifications for the external stakeholders (*Battaglia*, 2017) and given the criticisms of green washing that could receive the sustainability certifications (*Esparon et al.*, 2014; *Mzembe et al.*, 2020), it is important to explore to what extent the most used certifications are promoting a real holistic approach of sustainability, without showing a limited vision of sustainability.

Despite all the studies done on certifications in hotel industry, in academia, three following questions remain to be addressed and which are the main objective of this paper:

- Q1-Which certifications are the most accepted in large companies in the industry?
- Q2-What do these certifications include (or do not include) compared to the sustainable benchmark in the industry?
- Q3-How could these certifications be improved to promote the resilience of the sector?

Trying to answer these questions, this study carry out an analysis to identify what are the certifications adopted by the large companies in the industry, how the concept of sustainability is applied in this sustainability certifications of the hotel industry, and make proposals to improve the certifications for hotels in terms of a holistic approach of sustainability that allow the recovery of the hotel industry and, consequently, of the tourism sector to be accelerated.

Therefore, in the following section we collect from the theoretical background on certifications in the hotel industry; in Section 3 we present the methodology, in the Section 4 show de results of the analysis descriptive and comparative of sustainability certificates against the sustainable benchmark in the industry, in Section 5 we suggest as a conclusion some improvement proposals for the recovery of the hotel industry, and finally we collect the references used.

2. Conceptual framework

2.1. Background on sustainable tourism certifications and their application in the hotel industry

Tourism certifications can be defined as a voluntary procedure, where a third party ensures in writing, granting a badge, that the facility, product, process or service meets the established standards and requirements (Spenceley, 2019). In the case of sustainable tourism certifications, the established standards and requirements focus on environmental, cultural, and socioeconomic issues (Spenceley and Bien, 2013). The purpose for a sustainability certificate can be varied, such as promoting sustainability in the supply chain, attracting a more sustainable-minded clientele, informing visitors about environmental performance and corporate social responsibility, but perhaps one of the most important is cost reduction through better environmental management (Font and Buckley, 2001; Geerts, 2014; Peiró-Signes et al., 2014; Molina-Azorín et al., 2015; Dunk et al., 2016). Sustainability certifications can be developed by different organizations such as non-profit organizations, private tourism organizations; governments or multi-stakeholder groups. In addition, they can be classified by the method used to measure the impact, differentiating certifications based on performance or certifications based on processes or procedures.

Hotel-related certifications vary based on different factors, such as your application, region, complexity, price, methodology or topics, even in some cases the certifications are ambiguous and the assessment methodologies present a lack of consistency and objectivity (Font and Harris, 2004). There are different certifications that deal with sustainability from different aspects such as: energy, water or waste management; commitment to the community; cultural and heritage conservation; architecture and design; practices related to human rights or sustainable purchasing management; or there are even certifications that cover all these issues such as the *International Tourism Partnership* (n.d.).

In spite of the heterogeneity of sustainable certifications, the specialized literature highlights the standard “Global Sustainable

Tourism Council” (GSTC) as a benchmark in sustainability in the tourism sector (Spenceley, 2019), and which is applicable to the entire tourism sector (Global Sustainable Tourism Council, 2016). GSTC manages the world standards for sustainability in tourism; and offers international accreditation for Sustainable Tourism Certification Bodies. GSTC criteria were created to provide a common understanding around the world of “sustainable tourism”, and are the minimum any tourism business should aspire to achieve. They are organized around four main themes: effective planning for sustainability, maximizing social and economic benefits for the local community, enhancing cultural heritage and reducing negative impacts on the environment.

In the case of the hotel industry, the main reasons that support a sustainability certification, according to *International Tourism Partnership* (n.d.) are: an independent evaluation of the impacts of a company; the identification of areas for improvement in management processes; providing a competitive advantage over competitors; the increase in sales by attracting more responsible clients and complying with the requirements established by some tour operators, meeting the expectations of some interest groups that demand more information about the impact (both positive and negative) of the companies or the increase efficiency and reduction of operating costs. In addition, Battaglia (2017) also highlights that the certifications could train managers about how to implement sustainability in their businesses, stimulate the continuous improvement approach, and could increase the ability of external stakeholders to distinguish between green washing practices and real sustainability ones. Moreover, recently, Bianco et al. (2023) have evidenced that sustainable certifications can contribute to create competitive advantage.

Despite the previously mentioned benefits, limitations and restrictions to the adoption of certifications have also been highlighted in the literature (Tepelus and Cordoba, 2005; Rome et al., 2006; Spenceley and Bien, 2013; Mzembe et al., 2020). Among the most cited, we can mention the following: lack of regular and solid financing to finance certification programs to limit excessive dependence on contributions from institutions that obtain certification; primacy of the environmental dimension with a focus on cost savings; disconnection between certifications and tour operators that promote sustainable tourism; Ignorance of sustainability certifiers by users, so they do not give it added value; implementation of certifications in hotels exclusively for promotional purposes without entailing sustainable management; large number of tourism certifications with limited transparency in their processes that makes it difficult for users to know their real meaning in terms of sustainability; and difficulty in capturing and especially retaining certified institutions. In this sense, Mzembe et al. (2020) tries to explain the ineffectiveness of certifications to attract and retain members through collective behaviors such as the free-rider problem and avoidance of responsibilities among members along with insufficient monitoring and sanction systems.

In order to overcome these limitations, Spenceley (2019) explored the main incentives that could be applied to encourage the adoption of sustainability certifications in hotels through a survey of 80 stakeholders in the African context. Among the

main reasons he highlighted tax relief and financial incentives, preferential promotion by national bodies, support for online booking platforms for sustainable tourism, more information on the benefits and costs of its adoption and the link of certifications to sustainable tourism itineraries. Along these same lines, [Tepelus and Cordoba \(2005\)](#) highlight a series of challenges that sustainable tourism certifications must address, among which we highlight: (i) greater promotion of preventive measures in certification systems so that they also become a tool to mitigate sustainability risks for both large and small hotels; (ii) a greater understanding of how hotels are currently using said certifications, which in turn contributes to creating new actions to promote the correct use of said certifications; (iii) greater integration of the individual performance of a hotel within the framework of a region, to create a sustainable tourism choice as a whole, where local authorities have an active role in controlling, verifying and planning tourism activities; (iv) greater transparency of certification processes and greater control of said processes by public institutions; (v) include social and cultural aspects in the certifications and avoid the supremacy of the environmental dimension associated with cost reduction.

After highlighting the benefits, limitations and challenge of the sustainable certifications, this study aims to contribute to give an answer to three main questions mentioned above (Q1, Q2 and Q3), identifying and exploring the content made public by the certifications that large companies in the hotel industry have adopted. Before delving into the certifications most accepted by large hotel companies according the number of guest rooms and number of hotels, the following section makes a brief presentation of the main characteristics of sustainability certifications for hotels in general terms. This research analyses voluntary sustainable certifications of hotels and compare with by the GSTC.

2.2. Sustainability certifications for hotels

This section analyses a set of internationally recognized sustainability certifications for hotels. Currently there are at least 100 hotel certifications that address various forms of sustainable tourism, each has its own certification program and variable adherence ([Spenceley, 2019](#)). According to the [Sustainable Hospitality Alliance \(2021\)](#), the most recognized certifications are Earth Check, Green Globe, Green Key, Travelife Sustainability and EU Ecolabel, highlighting the GSTC Criteria as an international sustainable standard for certifications. These certifications are focused on the processes followed in the activity of the hotel; however, there are other type of certifications based on the building of the hotel ([Chi et al., 2022](#)), such as LEED, which are out of the scope of this study.

In the first place, it is worth mentioning the heterogeneity of subsectors related to the hotels on which the certifications under study deal. Most of the certifications focus on hotels and other types of tourism companies: guest houses, campsites, tour operators, travel agencies, vacation rentals, golf clubs,

restaurants, tourist attractions, museums, events, parks, etc. beaches among others. There is also a broad range of certification bodies, which uses different metrics to evaluate the sustainability aspects.

Secondly, it can be noted that a large number of these certifications are recognized by the GSTC (for example: Certification for tourism sustainability in Costa Rica; Earthcheck Company Standard; Eco Certification Malta). The GSTC is a benchmark in sustainability in the tourism sector ([Spenceley, 2019](#)). The GSTC established and managed an international standards for sustainable tourism in order to bring coherence for sustainable tourism destination ([Spenceley, 2019](#)). Through extensive consultation processes, the GSTC established in 2016 globally recognized criteria for sustainable tourism at the hotel industry. The GSTC can also recognize or approve sustainable tourism certification standards and processes that meet or surpass the relevant GSTC Criteria ([Global Sustainable Tourism Council, 2016](#)). Actually, the GSTC certifies the sustainability of hotels according to its standards, and by offering a list of sustainable accommodations ([Rylance and Spenceley, 2016](#)). The GSTC establishes four basic pillars necessary to address sustainability in the sector: (i) Sustainability management; (ii) Socioeconomic Impacts; (iii) Cultural impacts; (iv) Environmental impacts (including resource consumption, pollution reduction, and biodiversity and landscape conservation). Aligned with these four pillars, this institution has proposed a set of criteria that represent a basic framework that at least any hotel should aspire to achieve and a series of key performance indicators to measure the level of compliance with the defined criteria. In the specific case of the hotel sector, this management and measurement framework is structured in the following four areas: (i) effective sustainability planning, (ii) maximization of social and economic benefits for the local community; (iii) enhancement of cultural heritage and reduction of negative impacts on the environment ([Global Sustainable Tourism Council, 2016](#)).

Third, the certifications address a broad spectrum of sustainability areas, including, among other topics, the following: natural impacts, climate change, waste management and recycling; energy and water; green purchasing and chemicals, care for the environment, land use planning, biodiversity, sustainable materials, resource conservation, indoor health, pollution control, transportation, social welfare, innovation, culture local, health, safety, communication, transparency (information to clients), clients, human rights, indigenous communities, fair labor conditions (fair hiring and protection of employees), philanthropy, projects social, food and beverage, purchasing and the supply chain, efficient company management, circular economy, local employment, fair trade, local entrepreneurs and sustainable architecture. Focusing on the themes, there is a wide diversity in the terms contemplated, although, except for those mono-themed certifications related to environmental aspects, the certifications focus on aspects corresponding to the three dimensions of sustainability: environmental, social and economic. On the other hand, the scant coverage of issues related to impacts throughout the supply chain and corporate governance can be highlighted.

In the following sections, this work analyzes the content of the main certifications adopted by large companies in the hotel sector.

3. Methodology

This study presents a qualitative approach about the concept of sustainability in the sustainability certificates of the main hotels in the word. This qualitative approach, allow us to provide an in-depth analysis about the integration of the different aspects of sustainability in tourism. For that end, the study analyzes the information offered by companies on their corporate websites as a source of public, accessible and objective data. The qualitative approach has been widely used for academic papers on sustainability in the hotel industry (e.g., Verma and Chandra, 2018; Serrano-Baena et al., 2020; Arnedo et al., 2021) and recommended by Sakao et al. (2023) to research process in management when its categorized as constructivism.

The first step, in order to answer Q1, is to identified the certifications mainly accepted by the hotel industry. The selection of the hotel sample was based on the ranking of the 100 most important hotel companies worldwide, which is based on number of guestrooms and number of hotels, published in 2020 by the specialized magazine Hotels Magazine (Hotel 325, 2020, p. 22). Next, the corporate websites of the initial sample were reviewed. Three companies were not considered in the final sample (97 hotel companies) for not offering information in English language. Subsequently, the public information on sustainability available on their corporate websites or in their sustainability reports was reviewed in order to identify the related certifications.

Once the sustainability certifications adopted by the large hotels have been identified, a descriptive analysis of each certification and a comparative analysis will be carried out based on the criteria for sustainable hotels proposed by the GSTC, which is a widely recognized reference worldwide in the hotel sector (Spenceley, 2019). The descriptive analysis was based on the following variables: scope of the certification (national or international), first year of the certification, number of indicators, sustainability dimensions addressed. In particular, the comparative analysis of the certifications analyzed was carried out according to the criteria proposed by the GSTC, in order to answer Q2. The GSTC proposes a total of 46 criteria distributed in the following four areas: Demonstration of effective sustainable management (which includes a total of 14 criteria); Maximization of social and economic benefits for the local community and minimization of negative impacts (with 9 criteria); Maximization of benefits for cultural heritage and minimization of negative impacts (with 4 criteria); Maximization of benefits to the environment and minimization of negative impacts (with 19 criteria).

This study applied a content analysis procedure for the comparison, observing if each of the 46 criteria was addressed in each certification. Content analysis is a research method used for interpreting data according to their context in an objective and rigorous way (Krippendorff, 1980). The interpretation phase was develop following Roman et al. (1999) process. The criteria of GSTC in each certification were analyzed independently by two of the authors and they compared the results after the extraction. In case of dissent, a third author entered into the process to decide the final classification.

Finally, the authors examine the results and discuss how the certifications in sustainability of hotels could improve in order to promote the resilience of the sector (to answer Q3).

4. Results

4.1. Descriptive analysis of sustainability certifications adopted by the hotel industry

It was found that a total of 44 of the 100 largest hotel companies shared some type of information related to sustainability, although only 31 companies published a report on the actions or measures implemented by the hotel group. The rest mentioned to a greater or lesser extent the different actions, agreements or certifications obtained by the company, but did not provide a report on their website to delve into the aspects of sustainability. Third, those certifications adopted by each of the hotels included in the final sample were identified. Focusing on certifications, it was observed that a total of 35 companies had some type of certification.

Table 1 shows the main characteristics of the certifications analyzed and the number of companies that adopt each of them. We can differentiate in international and local level.

In the following paragraphs this study presents the certifications analyzed classified by their scope (international or local).

4.1.1. International certification

Green Globe (<https://www.greenglobe.com>) is that was created in 1990. Environmental, social and economic impacts in their proposed indicators (41 indicators). The environment represents 42% of the total number of indicators, 22% of these can be categorized within the social impact of the organization. This certification is committed to indicators directly related to cultural heritage, accounting for 10% of the total.

Green Key (<https://www.greenkey.global/>) international certifications that was created in 1994. It has 131 indicators in total and it presents a majority of indicators related to the environment. In fact, 65% of the total indicators fall into this category, while the social pillar of sustainability has less presence in the total number of indicators, accounting for 15% of the total.

Earth check Company Standard (<https://earthcheck.org/what-we-do/certification/>) founded in 1987 that work internationally and both deal with environmental, social and economic impacts in their proposals. Consulting the Earthcheck website, there is no specific information available on the areas, the information presented is general topics and therefore it does not publish information regarding the indicators.

Travelife Sustainability in Tourism (<https://travelifesustainability.com>), founded in 2007, that work internationally with environmental, social and economic impacts. It proposes a total of 161 indicators, of which a greater number fall within the environmental perspective, reaching 43% of the total number of indicators. The social perspective of sustainability acquires considerable weight since it represents 36% of the total number of indicators.

Nordic Swan Ecolabel (<https://www.nordic-ecolabel.org>) is a territorial level, mainly in the Nordic countries including Denmark, Finland, Iceland, Norway and Sweden. It is a certification focused not only on hotels but on all types of products or services. The Nordic Swan case focuses solely on aspects related to the

TABLE 1 Sustainability certifications adopted by the hotel industry (large hotels) and descriptive analysis of the certifications.

Certification	Scope	Foundation	Total indicators	Env. impacts	Social impacts	Economic impacts	Num. of hotel groups
Biosphere Responsible Tourism (ITR)	International	1995	41	x	x	x	1
Certificación para la sostenibilidad turística en Costa Rica	Local	2018	75	x	x	x	1
Earthcheck Company Standard	International	1987	n.a.	x	x	x	3
Ecoturismo Kenya Ecorating Certification Scheme	Local	2002	30	x	x	x	1
EU Ecolabel	International	1992	61	x	-	-	1
Green Globe	International	1990		x	x	x	5
Green Growth 2050	International	2015	400	x	x	x	1
Green Key	International	1994	131	x	x	x	5
Green Key global Eco Rating	International	1998	n.a.	x	x	x	1
Green Seal	Local	1989	33	x	-	-	1
Nordic Swan	Local	1989	39	x	-	-	2
Travelife Sustainability Tourism	International	2007	161	x	x	x	3

Source: Own elaboration based on information published by companies on their websites or sustainability reports.

environment. The number of indicators varies depending on the type of hotel establishment. For a hotel with a restaurant and conference facilities propose 39 indicators, all related to the environmental perspective of sustainability.

EU Ecolabel (https://environment.ec.europa.eu/topics/circular-economy/eu-ecolabel-home_en) was established in 1992 and its scope is the European Union, although it is recognized worldwide. This certification seeks the environmental excellence of products and services. A total of 22 mandatory criteria are included in the certification for tourist accommodation. In addition, they propose a series of optional criteria (45 criteria). Within these optional criteria, number 61 refers to having a “Social Policy” being the only mention of a perspective other than the environmental one.

Biosphere Responsible Tourism Estándares (<https://www.biospheresustainable.com/>) is a certification founded in 1995 that helps tourism companies and destinations to align with the Sustainable Development Goals and the United Nations 2030 Agenda. The indicators proposes are not provided, although the following criteria are identified in a manifest of the responsible tourism company: safety; consumption of local products; technological innovation; minimize impact on the environment (efficient resource management); promote local heritage and sustainability in the local community; conservation, protection and regeneration of terrestrial and aquatic ecosystems; the promotion of training; respect and support for the local culture; respect for diversity; decent and fair working conditions; information and transparency.

Green Growth 2050 (www.greengrowth2050.com) is a certification that collects more than 400 indicators related to corporate social responsibility and sustainability. These indicators

are not mandatory, but depending on the general performance, a different category of this standard is awarded, differentiating between gold, silver and bronze. These indicators are divided into different categories such as: sustainability management, legal compliance, labor practices, health and safety, human rights, sustainable design and construction, sustainable operations (best practices), corruption, resource management and consumption, natural resources, emissions or waste, respect for biodiversity, or commitment to the local community and its heritage.

Green Key Global (<http://www.greenkeyglobal.com/>) is a certification created in 1998 based in Canada. Although it has an international presence, most of the certified hotels are located in North America with some presence in the United Kingdom (one hotel), in Qatar (one hotel) as well as in Thailand (one hotel). In this case, it is not possible to know the number of indicators proposed or the topics on which they focus. At least it is not information that can be accessed on their website.

4.1.2. Local certifications

La Certificación para la sostenibilidad turística en Costa Rica ([Ict.go.cr](http://ict.go.cr)) is a standard created by the Costa Rican Tourism Institute and supported by the Costa Rican Ministry of Tourism as well as recognized by the World Tourism Organization. This certification proposes a total of 75 indicators that are applied to all tourist activities. Depending on the activity in question, specific indicators would be added. In the case of tourist accommodation, 7 more indicators are added to the previous ones. The indicators are divided into three common areas for all types of tourism activities: organizational management, which has a total of 32 indicators (representing almost 43% of the total); the social, economic and

cultural impact that includes a total of 11 indicators; and the environmental impact with a total of 32 indicators.

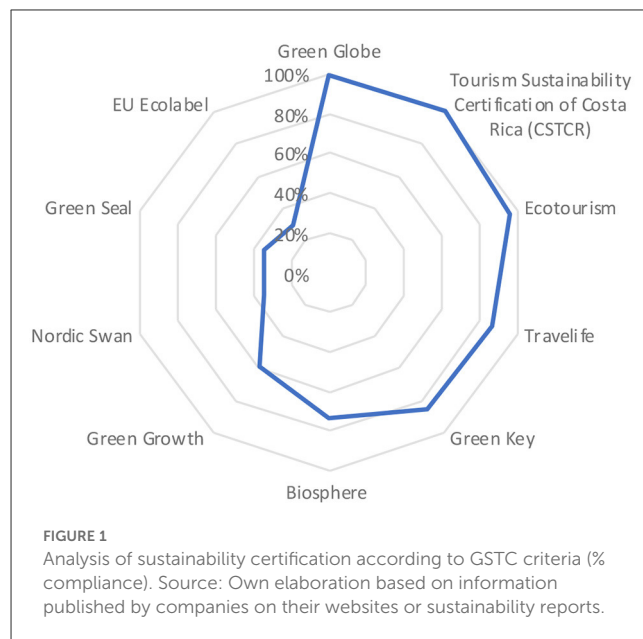
Ecotourism Kenya Ecorating Certification Scheme (<https://ecotourismkenya.org/>) was founded in 2002 and certifies accommodation establishments, but also tour operators including airlines. Currently its scope of action is limited to Kenya. This standard includes a total of 30 criteria; Conservation (with 10 indicators, on topics related to water, waste, pollution, water or energy management, but Something new for the standards under study is that a criterion on Educating the Visitor is included); Community (with 7 indicators related to local employment, local products, or the empowerment of the local community, among others); Culture (with 4 indicators related to architecture or the preservation and protection of local areas and Business practice (with 9 indicators with topics such as fair marketing, education and training of employees, human rights, child labor, employment and its remuneration or shopping).

Green Seal certification (<https://greenseal.org/splash/>) was founded in 1989 and its scope of action is limited to the United States. There are 3 Green Seal certified hotel establishments outside, but the vast majority (28 establishments out of a total of 31) are located within the US. It proposes a 33 standards Hotels and Accommodation Companies with 7 areas or topics. The action topics of this standard for hotel establishments are the following: minimize waste, reuse and recycle; efficient energy management; consumption water management; hazardous substance management; shopping; and continuous improvement. As additional criteria for those establishments that want to opt for the gold certification, other topics are included, such as the use of renewable energies, sustainable construction, the control of greenhouse gas emissions, the reduction of energy consumption, among others. All the criteria are related to the environmental or environmental impact of the operations, in no case is any aspect included in the social or economic impacts of sustainability such as employees, customers, the local community or working conditions.

It should be noted for this section, as expected, the certifications that are adopted by a greater number of hotel chains are of an international nature, and sustainable hotel certifications prioritizes environmental issues in their indicators. This result is consist with previous research (Han and Yoon, 2015; Dos Santos et al., 2017) and could be explained because the only dimension included in the certification or because it is the one with the largest number of related indicators or criteria. However, sustainability concept should be addressed under a holistic perspective (Lozano, 2008, 2015; Muñoz-Torres et al., 2018), including political and cultural dimensions, specially in the torusims sector (Perez and Del Bosque, 2014), in order to promote tourism sustainable development.

4.2. Comparative analysis of the certifications analyzed on the criteria proposed by the Global Sustainable Tourism Council

Figure 1 shows the comparative analysis of the certifications analyzed according to the criteria proposed by the GSTC.



We must bear in mind that the Earthcheck standards as well as Green Key Global do not provide information on the criteria or indicators used, so it is not possible to include them in this section. On the other hand, to delve into the cases of the Green Growth and Biosphere certifications, public information related to the criteria used has been used (either on its website or through its responsible tourism company manifesto), without having access to the criteria themselves.

As a first general result, we can confirm that those standards that focus only on environmental aspects do not manage to cover all the indicators proposed by the Global Sustainable Tourism Council. The European Union eco-label, the Scandinavian Nordic Swan standard and the North American Green Seal are good examples of this. None of these three standards includes indicators related to the maximization of benefits for cultural heritage and the minimization of negative impacts.

If we look at the standards that best fit the criteria set by the GSTC, this is limited to two options. The case of Green Globe 2050 and “La Certificación para la sostenibilidad turística” in Costa Rica are the only standards that meet all the criteria established by GSTC. We can even add that in both options more criterias or indicators are included than those established by this organization as an example Green Globe includes fair trade as one of its criteria or “La Certificación para la sostenibilidad turística” in Costa Rica includes equity and the empowerment of women as a specific criterion.

The next standard that meets a large number of the criteria set by the GSTC is the Ecotourism Kenya Ecorating Certification Scheme. There are two criteria (of a total of 46) that are not found in the proposal that this standard proposes. They are the criteria related to the efficient purchase and the autochthonous pieces artifacts.

It is important to highlight that of the 3 standards that best fit or meet the criteria established by the GSTC, two of them are local standards, which may justify the reason why some of the

international hotel groups decide on these standards. specific to certain areas.

In the next sections, this study analyzes the degree of compliance with the 46 criteria proposed for Sustainable Hotels by the GSTC for each of the four sections that make up the benchmark.

4.2.1. Comparative analysis of the certifications analyzed on the criteria “demonstrative effective sustainable management”

The first section (Section A) is related to the demonstration of effective sustainable management. This section includes a total of 14 criteria and sub-criteria. Table 2 presents the degree of compliance with each of the standards analyzed according to the criteria in this section.

Criterion A1 corresponds to the “Sustainability Management System”, in which the organization must have implemented a long-term sustainable management system that is appropriate to its reality and scale, considering the environmental, social, cultural, economic, quality, human rights, health, safety and risk and crisis management, and that promotes continuous improvement. All the standards under study meet this criterion to a greater or lesser extent, except for GreenSeal and Nordic Swan, which do not mention the need to implement a sustainable management system. The EU eco-label does include a criterion related to a management system focused on environmental management, so we can say that it partially meets this criterion, since it does not include all the aspects mentioned by the GSTC criterion.

Criterion A2 “Legal Compliance” refers to the organization’s compliance with all local, national and international legislation

and regulations; including, among others, aspects of health, safety, labor law and the environment. Nordic Swan, Biosphere and the EU Ecolabel are the standards that do not include this aspect as a criterion, at least in a clear and specific way.

Criterion A3 “Reporting and Communication” aims for the organization to demonstrate that it communicates its sustainability policy, actions and performance to stakeholders, including customers, with the idea of obtaining their commitment to support. The only standard that does not specifically include a criterion is Green Seal. The rest of the standards under study show a criterion in reference to the commitment to communicate the sustainability policy to the stakeholders.

Criterion A4 is “Staff Engagement”, where the staff of an organization must show that they are committed to the development and implementation of the sustainable management system. In addition, staff must receive regular training on their roles and responsibilities. Green Seal is the only standard that does not meet this criterion in a specific and clear way as it happens with the rest of the standards.

Criterion A5 is “Customer Experience”, where the organization monitors customer satisfaction, including sustainability aspects, and corrective measures are applied. The standards that do not contemplate a specific criterion on the management of customer satisfaction are Green Key, Nordic Swan, the EU eco-label and Green Seal.

Criterion A6 “Accurate promotion” establishes that promotional materials and marketing communications must be precise and transparent with respect to the organization and its products and services, not promising more than what is offered also in terms of sustainability. This is one of the criteria least

TABLE 2 Comparative analysis—effective sustainable management.

CODE	GSTC—criteria for hotels	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	% Compliance
A	Demonstrate effective sustainable management											69%
A.1	Sustainability management system	x	x	x	x	x	x	x			x	80%
A.2	Legal compliance	x	x	x	x	x		x		x		70%
A.3	Reporting and communication	x	x	x	x	x	x	x	x		x	90%
A.4	Staff engagement	x	x	x	x	x	x	x	x		x	90%
A.5	Customer experience	x	x	x	x		x	x				60%
A.6	Accurate promotion	x	x	x				x				40%
A.7	Buildings and infrastructure	x	x	x		x	x			x		60%
A.7.1	Compliance	x	x	x		x	x	x		x		70%
A.7.2	Impact and integrity	x	x	x	x	x	x		x	x	x	90%
A.7.3	Sustainable practices and materials	x	x	x		x	x		x	x		70%
A.7.4	Access for all	x	x	x	x	x	x	x				70%
A.8	Land, water, and property rights	x	x	x	x							40%
A.9	Information and interpretation	x	x	x	x		x	x				60%
A.10	Destination engagement	x	x	x	x	x	x	x				70%

(1) Green Globe; (2) CSTCR; (3) Ecotourism; (4) Travelife; (5) Green Key; (6) Biosphere; (7) Green Growth; (8) Nordic Swan; (9) Green Seal; (10) EU Ecolabel. Shading in red means that <50% of the certifications meet the criteria.

Source: Own elaboration based on information published by companies on their websites or sustainability reports.

followed by the certifications analyzed. Only Green Globe, Green Growth, CSTC, and Ecotourism Kenya Ecorating Certification Scheme include criteria in their proposals.

Criterion A7 “Buildings and Infrastructure” is related to the planning, location, design, construction, renovation, operation and demolition of buildings and infrastructure. The standards that demonstrate involvement with these issues in whole or in part are: Green Seal, Ecotourism Kenya, CSTC, Biosphere, Green Key and Green Globe. Within this criterion, a total of 4 sub-criteria are included that are followed by at least 70% of the certifications analyzed.

Criterion A8 “Land, Water and Property Rights” refers to the acquisition by the organization of rights to water, land and property acquisition are legal, comply with community and indigenous rights, and includes their informed consent, prior and free; and does not require involuntary resettlement. This criterion is one of the least followed, since only four standards include issues related to property rights and fresh water.

Criterion A9 “Information and Interpretation” aims for the organization to provide information and interpretation of the natural environment, local culture and cultural heritage, as well as an explanation of appropriate behavior during the visit to natural areas, living cultures and cultural heritage sites. 60% of the certifications meet this criterion.

Criterion A10 “Destination Engagement” is associated with the organization’s involvement in the planning and sustainable management of the destination, where this opportunity exists. All the certifications in this study show commitment to the destination with the exception of the EU Ecolabel, Green Sean and Nordic Swan.

Within this Section A there are three criteria that show greater compliance by the standards under study. Criteria A3 (related to reporting and communication), A4 (staff engagement) and sub-criterion A7.2, which mentions Impact and Integrity, are the criteria that include the largest number of standards, with a total of 9 of the 10.

4.2.2. Comparative analysis of the certifications analyzed on the criteria associated with social and economic aspects

Section B is dedicated to maximizing social and economic benefits to the local community and minimizing negative impacts. In this section, a total of 9 criteria are proposed, which are shown in [Table 3](#). As can be seen in the table, in the vast majority of the criteria analyzed in this section (criterion B.1, B.2, B.4, B.5, B.6, and B.7) the standards that include these criteria are those that consider the three dimensions of sustainability, since they consider support for the community and the local environment as a factor to be taken into account.

Criterion B1 “Community Support” aims for the organization to actively support local infrastructure and community social development initiatives. Some examples of initiatives include education, training, health, sanitation, and projects that address the impacts of climate change.

Criterion B2 “Local Employment” is associated with equal opportunities for employment and professional development, including managerial positions, by local residents.

Criterion B3 “Local Purchasing” refers to the purchase and offer of products and services from local suppliers and fair trade as a priority; whenever possible. Green Globe, Travelife, Nordic Swan, Biosphere, Green Growth, CSTC and Ecotourism Kenya are the standards that specifically include support for local providers in their criteria.

Criterion B4 “Local Entrepreneurs” is related to supporting local entrepreneurs in the development and sale of sustainable products and services that come from the natural, cultural and historical environment of the area.

Criterion B5 “Exploitation and harassment” refers to the implementation of policies against commercial, sexual or any other form of exploitation or harassment, particularly of children, adolescents, women, minorities and other vulnerable groups.

Criterion B6 “Equal Opportunities” aims to promote equal employment opportunities, including in management positions, without discrimination based on gender, race, religion, disability or others.

Criterion B7 “Decent Work” is related to respect for labor rights, where it is intended to provide a safe work environment and a decent salary. Employees have access to ongoing training, experience and opportunities for growth.

Criterion B8 “Community Services” intends that the activities of the organization do not endanger the provision of basic services, such as food, water, energy, health and sanitation of neighboring communities. Green Globe, Travelife, Green Growth, Biosphere, CSTC and Ecotourism Kenya are the standards that do show commitment to this criterion to a greater or lesser extent.

Criterion B9 “Local livelihoods” tries to guarantee that the activities of the organization do not negatively affect the different ways of earning a living, including the use of water resources and of the territories, right of way, transportation and housing of the environment local. The standards that meet these criteria are the same as those that meet the previous criteria: Green Globe, Travelife, Green Growth, Biosphere, CSTC and Ecotourism Kenya.

Analyzing the level of compliance with the criteria of this Section B, it can be concluded that it is somewhat lower when compared to the previous section. In the best of cases, we find a maximum of 7 certifications out of 10 that meet some of the criteria, with criteria B8 and 9 being the ones that are only present in 6 of them.

4.2.3. Comparative analysis of the certifications analyzed on the criteria associated with cultural heritage

Section C is dedicated to maximizing benefits to cultural heritage and minimizing negative impacts. In this section, a total of 4 criteria are proposed, which are presented in [Table 4](#).

The first three criteria of this section (C1 “Cultural Interactions”, C2 “Protecting Cultural Heritage”, and C3 “Presenting Culture and Heritage”) are included in the proposal for 6 of the standards under study. These standards are: Green

TABLE 3 Comparative analysis—social and economic.

CODE	GSTC—criteria for hotels	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	% Compliance
B	Maximize social and economic benefits to the local community and minimize negative impacts											68%
B.1	Community support	x	x	x	x	x	x	x				70%
B.2	Local employment	x	x	x	x	x	x	x				70%
B.3	Local purchasing	x	x	x	x		x	x	x			70%
B.4	Local entrepreneurs	x	x	x	x	x	x	x				70%
B.5	Exploitation and harassment	x	x	x	x	x	x	x				70%
B.6	Equal opportunity	x	x	x	x	x	x	x				70%
B.7	Decent work	x	x	x	x	x	x	x				70%
B.8	Community services	x	x	x	x		x	x				60%
B.9	Local livelihoods	x	x	x	x		x	x				60%

(1) Green Globe; (2) CSTCR; (3) Ecotourism; (4) Travelife; (5) Green Key; (6) Biosphere; (7) Green Growth; (8) Nordic Swan; (9) Green Seal; (10) EU Ecolabel.
 Source: Own elaboration based on information published by companies on their websites or sustainability reports.

TABLE 4 Comparative analysis—cultural heritage.

CODE	GSTC—criteria for hotels	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	% Compliance
C	Maximize benefits to cultural heritage and minimize negative impacts											55%
C.1	Cultural interactions	x	x	x	x	x	x					60%
C.2	Protecting cultural heritage	x	x	x	x	x	x					60%
C.3	Presenting culture and heritage	x	x	x	x	x	x					60%
C.4	Artifacts	x	x		x	x						40%

(1) Green Globe; (2) CSTCR; (3) Ecotourism; (4) Travelife; (5) Green Key; (6) Biosphere; (7) Green Growth; (8) Nordic Swan; (9) Green Seal; (10) EU Ecolabel.
 Shading in red means that <50% of the certifications meet the criteria.
 Source: Own elaboration based on information published by companies on their websites or sustainability reports.

Globe, Green Key, Travelife, Biosphere, CSTC and Ecotourism Kenya. The last criterion, C4 “Artifacts” intends to prevent the sale, commercialization or exhibition of historical and archaeological elements, except when permitted by local and international legislation. This criterion is one of the least followed by the certifications analyzed. In fact, only 4 of the certifications contemplate in some way the protection of local pieces or artifacts within their proposals. These standards are Green Globe, Green Key, Travelife and CSTC.

4.2.4. Comparative analysis of the certifications analyzed on the criteria associated with the environment

The last section of the proposed criteria for sustainable hotels is Section D, related to maximizing benefits to the environment and minimizing negative impacts. This section is divided into three main criteria (D1: Conservation of resources, D2: Reduction of Pollution, and D3: Conservation of biodiversity, ecosystems, and landscapes); each one in turn contemplates a total of 4, 6, and 6 sub-criteria, respectively. Table 5 shows the detail of the different criteria included in the section and the degree of follow-up of each of the certifications analyzed.

Criterion D1 “Conserving resources” is included in all the certifications analyzed. If we delve into the subcriteria, we can identify differences. Sub-criterion D1.1 “Environmentally Preferable Purchasing” relates to purchasing policies that favor environmentally sustainable suppliers and products, including capital goods, food, beverages, construction materials, and consumables. The sub-criterion D1.2 “Efficient purchasing” where it is intended to carefully manage the purchase of disposable and consumable products, including food, in order to minimize waste. Regarding this criterion, 3 standards are identified that do not specifically mention an efficient purchase as a criterion to be considered. This is the case of the EU ecological label, Green Growth as well as the proposal of Ecotourism Kenya. The last two sub-criteria included within resource conservation are D1.3 which refers to energy conservation and D1.4 in relation to water conservation. All the standards included in this study incorporate criteria or indicators related to both sub-criteria.

Criterion D2 “Reducing Pollution” is the criterion that achieves greater compliance by the certifications analyzed, since the 6 sub-criteria that compose it (D2.1 “Greenhouse gas emissions”; D2.2 “Transport”; D2.3 “Wastewater”; D2.4 “Solid waste”, D2.5 “Harmful Substances”, and D2.6 “Minimize pollution”) are covered by 90% of the certifications in some cases (D2.2, D2.3, and D2.4) or by 100% (D2.1, D2.5, and D2.6).

TABLE 5 Comparative analysis—environment.

CODE	GSTC—criteria for hotels	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	% Compliance
D	Maximize benefits to the environment and minimize negative impacts											78%
D.1	Conserving resources	x	x	x	x	x	x	x	x	x	x	100%
D.1.1	Environmentally preferable purchasing	x	x	x	x	x	x		x	x		90%
D.1.2	Efficient purchasing	x	x		x	x	x		x	x		70%
D.1.3	Energy conservation	x	x	x	x	x	x	x	x	x	x	100%
D.1.4	Water conservation	x	x	x	x	x	x	x	x	x	x	100%
D.2	Reducing pollution	x	x	x	x	x	x	x	x	x	x	100%
D.2.1	Greenhouse gas emissions	x	x	x	x	x	x	x	x	x	x	100%
D.2.2	Transport	x	x	x	x	x	x		x	x	x	90%
D.2.3	Wastewater	x	x	x	x	x		x	x	x	x	90%
D.2.4	Solid waste	x	x	x	x	x		x	x	x	x	90%
D.2.5	Harmful substances	x	x	x	x	x	x	x	x	x	x	100%
D.2.6	Minimize pollution	x	x	x	x	x	x	x	x	x	x	100%
D.3	Conserving biodiversity, ecosystems and landscapes	x	x	x	x	x	x					60%
D.3.1	Biodiversity conservation	x	x	x	x	x	x					60%
D.3.2	Invasive species	x	x	x		x						40%
D.3.3	Visits to natural sites	x	x	x	x	x						50%
D.3.4	Wildlife interactions	x	x	x	x	x						50%
D.3.5	Animal welfare	x	x	x	x	x						50%
D.3.6	Wildlife harvesting and trade	x	x	x	x	x						50%

(1) Green Globe; (2) CSTCR; (3) Ecotourism; (4) Travelife; (5) Green Key; (6) Biosphere; (7) Green Growth; (8) Nordic Swan; (9) Green Seal; (10) EU Ecolabel.

Shading in green means that 100% of the certifications meet the criteria.

Source: Own elaboration based on information published by companies on their websites or sustainability reports.

Criterion D3 “Conserving biodiversity, ecosystems and landscapes” is the least followed by the certificates analyzed in this section. Specifically, only 6 standards cover this criterion to a greater or lesser extent, specifically: Green Globe, Green Key, Travelife, Biosphere, CSTC, and Ecotourism Kenya. Sub-criterion D3.1 “Biodiversity conservation” continues to be covered by the 6 certifications mentioned in criterion D3. Sub-criterion D3.2 “Invasive Species” is only followed by 4 certifications: Green Globe, Green Key, CSTC, and Ecotourism Kenya. The rest of the sub-criteria included in this criterion are: D3.3 “Visit to natural sites”; D3.4 “Wildlife interactions”; D3.5 “Animal Welfare”; and D3.6 “Wildlife harvesting and trade”. Green Globe, Green Key, Travelife, CSTC, and Ecotourism Kenya are the standards that meet these last 4 sub-criteria.

As a conclusion to this section, this study highlights that it is the section that registers the greatest compliance, reaching 100% by the standards in 7 subcriteria and 90% compliance in 4 of them of the total of 19 criteria and subcriteria that are included. The criterion that achieves the least compliance is that related to the conservation of biodiversity, where surprisingly,

the standards focused on the environmental dimension do not explicitly contemplate this issue either.

5. Discussion

Certifications for hotels in terms of sustainability can be a tool that can contribute to hotels that are committed to innovation and sustainability as a strategy for post-COVID recovery, since it could have a mediating role to improve the relationship between sustainability and resilience in hotels. Sustainability certifications has been used as a tool to operationalize the sustainability in the hotels, at the same time that expects to meet the stakeholders’ expectations (Font and Harris, 2004), however to be sure that it represents an effective sustainable development tool, it is necessary to apply certifications that address the different dimensions of sustainability, including the critical aspects of the sector.

Focusing on the certifications most accepted in large hotel companies (RQ1), this study finds that 35 companies from the 100 largest hotel companies publish some type of sustainability

certifications. It is important to highlight the broad range of certifications that the hotels that intend to commit to sustainability or improve their sustainable performance have available. In fact, this study has identified 12 certifications used by the sample which two of them are adopted by 5 hotels and the rest for 3, 2, or 1 hotel. Thus, it is not a clear accepted certification of sustainability accepted by the majority of the large hotels.

Given the high number of certifications, before choosing a specific certification, it is important to know it in depth and to explore if it is approved or recognized by an international reference organization such as the World Council for Sustainable Tourism, and to know what criteria and areas of sustainability it addresses (Q2). Through this study, we have observed that sustainable certifications for hotels can be distinguished, which focus mainly or solely on the environmental impact of the establishment. Examples of this type of certification are EU Ecolabel, Green Seal and Nordic Swan. On the other hand, there are also sustainable certifications for hotels that go beyond the environmental perspective, and also cover the social, economic and cultural areas as part of the management of sustainability in hotels. Taking this information into account, we can suggest to hotels that intend to integrate sustainability into their management, that a good proposal is to opt for a certification that covers the largest number of areas or topics. In other words, a certification that is not only committed to reducing negative impacts on the environment, but also proposes effective sustainability planning, maximizing economic and social benefits for the local community, as well as respecting and improving cultural heritage.

Additionally, in present context, sustainability must be understood as a key factor that will allow the hotel sector to transform and recover. For this and attempting to answer to how could certifications be improved to foster the resilience of the sector (Q3), this study highlights the importance that hotels adopt sustainability certifications that promotes sustainability from a strategic point of view (Perez and Del Bosque, 2014) and consistent with the different elements that make up the organization's management: mission, strategies, actions, risks and key performance indicators (Fernández-Izquierdo et al., 2021). In this way, the certifications will not only serve to demonstrate their good performance in sustainability to third parties, since they will also guide them on the variables that the sector must manage, what actions can be developed and how to measure them.

In parallel, certifications must also move toward sustainability offering a comprehensive perspective, including economic, environmental, social and long-term aspects in a balanced way, as defined by Lozano (2008, 2015) and Muñoz-Torres et al. (2018). This study has been shown that the certifications adopted by large hotel companies still present a primacy of the environmental dimension focused on the reduction of pollution and conservation of resources, which has an impact on the improvement of efficiency and the cost savings, but forget the measurement of social impacts.

On the other hand, the variety of existing certifications and the lack of generally accepted certifications in the hotel industry are surprising, as well as the lack of transparency regarding the requirements and criteria of some of them. This favors users' ignorance of the certifications, making it difficult for them to grant

it added value. With the aim of facilitating decision-making for responsible end users, standards could be created at the level of tourist options, where accommodations along with other tourist activities were endorsed by certifications that at least met the criteria accepted in the sector as for example those established by the GSTC.

Finally, it is worth mentioning that the certifications must be living standards that must adopt a continuous improvement approach and take advantage of the opportunities in the environment. In this sense, it is necessary that sustainability certifications consider the impacts throughout the supply chain and the great global challenges and risks framed in the Sustainable Development, as well as trying to guide organizations in the achievement of them.

6. Conclusion

The objective of this work is to analyze the sustainability on the content of the certifications in sustainability of the hotel industry and delve into the certifications adopted by the large companies in the industry. For this, this work has identified the certifications adopted by a sample of large hotel chains at an international level. Through this process, the 12 sustainability certifications adopted by the large hotel chains have been determined and a descriptive analysis of each of the certifications has been carried out based on the public information shown by the certifications on their official web pages. Subsequently, a comparative analysis of sustainability certifications was carried out based on the criteria for sustainable hotels proposed by the Global Sustainable Tourism Council (GSTC), since it represents a worldwide benchmark in the hotel sector.

A first result shows the primacy of the environmental dimension in sustainability certifications in two directions. First, this dimension is contemplated by 100% of the certifications analyzed, compared to 75% of the certifications which also include social and economic aspects. Second, the environmental criteria presented by the GSTC are the criteria most followed by the certifications analyzed (78% compared to 69%—sustainable management; 68%—social and economic aspects; 55% cultural heritage) except for the conservation of biodiversity, which does not exceed 60% compliance with the certifications analyzed.

This study presents some limitations in the development of this research. The first limitation is that the empirical analysis has been focused on the most important international hotels, which may not represent the whole panorama of all hotel companies, therefore, it may limit the generalizability of results. The future studies could be focused on other sample such as the most sustainable hotels, rural hotels, SMEs hotels, domestic hotels or other typology of hotels for a deeper analysis. Another limitation is regarding the benchmark used. Further works could focus on other international sustainability frameworks as the 2030 Agenda and related reports for their operationalization. The third limitation is related to the source of information which has been based on public sources. Other studies could complement the process adding questionnaires, interviews or surveys with the providers of certifications.

In this sense, it is necessary that future studies that attempt to advance the sustainability certifications consider the impacts throughout the supply chain and the great global challenges and risks of Sustainable Development, as well as trying to guide organizations in achieving them.

Finally, it is worth highlighting the need to improve the transparency of the certifications with the aim of different stakeholders can better understand their added value, as well as aligning better the requirements and criteria with international initiatives that seek to promote a holistic sustainable development.

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found in the links included in the Section 4.1.1 of this article.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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