

Sustainable Practices in Hospitality During COVID-19: Looking Back for Moving Forward

Abstract

Sustainability issues are becoming increasingly important in the hospitality sector during crisis times, such as COVID-19 and post the pandemic. Sustainable practices can lead to diverse business performance, accomplish a competitive advantage, and earn broader community recognition. In order to synthesize the literature on sustainable practices in the hospitality industry, we developed systematic literature to illustrate the dominant sustainable practices in hospitality research. We present a comprehensive review of the 31 articles on sustainable practices in the hospitality context spanning over two years (2020–2021) during COVID-19 and extend the scope in distinctive ways. We present conceptual clarity on sustainable practices in the hospitality domain. We present a comprehensive projected research agenda to demonstrate theoretical discourses and generate empirical research. Our critical review presents a holistic idea of the main focus of the prior studies and the main areas of research of focus in future studies.

Keywords; Sustainability, Sustainable practices, COVID-19, Hospitality

Introduction

Sustainability is a critical topic in business processes and consumers' lifestyles (Cantele & Cassia, 2020). For the past two decades, the concept of sustainability has been widely discussed socially and in the context of scientific research (Malheiro, Sousa, Liberato, & Liberato, 2020). Sustainability refers to environmentally, socio-culturally, and economically responsible projects and actions (Albrecht, Haid, Finkler, & Heimerl, 2020). Sustainable development goals set by the United Nations ask that everyone commits to reaching the goals' targets by 2030 (Stombelli, 2020). The three main goals of sustainability are economic development, social development, and environmental protection (Hakovirta & Denuwara, 2020). Sustainability entails not only improving the lives of all living things, but also creating favorable business environments that benefit businesses (Stombelli, 2020). Sustainability is very vital for society (Ocampo, Marshall, Wellton, & Jonsson, 2021), its concept continues to attract increasing prominence (Oriade, Osinaike, Aduhene, & Wang, 2021).

The tourism and Hospitality industry is important for the global economy (Han, 2021; Malheiro et al., 2020; Ramkissoon, 2020). Sustainability has become a vital strategic objective for tourism destinations worldwide to protect the environment and facilitate social inclusion (Moyle, Weaver, Gössling, McLennan, & Hadinejad, 2021; Pulido-Fernández, Andrades-Caldito, and Sánchez-Rivero (2015). Being environmentally and socially responsible is critical for hotels to accomplish a competitive cost advantage and earn broader community recognition (Cvelbar and Dwyer, 2013; Ramkissoon, Mavondo, & Sowamber, 2020). Hence, it is essential for hotels to include environmental and social questions in their strategic planning.

To win market share in the hotel business, it is critical to focus on sustainability (Oxenswärdh, 2020). Calisto et al. (2021) concluded that hotels implement environmental sustainability practices to respond to 'doing things right "rather than to societal challenges". In addition, Mzembe, Lindgreen, Idemudia, and Melissen (2020) concluded that hotels join the green key scheme to enjoy reputational benefits, achieve competitive advantages, and contribute to sustainability as a public good.

Hotel sustainability practices may not directly lead to better financial performance in the short term, but they can accomplish superior social and environmental performance, which can lead to generating financial performance (Shi & Tsai, 2020; Sowamber, Ramkissoon, & Mavondo, 2018). In addition, Duric and Topler (2021) concluded that hotels can maintain their competitiveness and attract a huge number of guests through environmental protection and sustainability. Furthermore, the hotel sector is one of the principal sectors that has a negative impact on the environment; it has a great responsibility to adopt sustainable practices that protect the environment and promote the economy and social equity (Malheiro et al., 2020).

Other scholars asserted that adopting sustainability practices is critical for hotels to reduce costs, improve their image and prestige, increase customer satisfaction (Ramkissoon & Mavondo, 2016; , and improve occupancy rates., the environmental strategy is vital for the hotel's long-term competitiveness (e.g., Pereira, Silva, & Dias, 2021). In this regard, Calisto et al. (2021) revealed that hotels need to transform their operations and implement practices to become more sustainable to be at a competitive advantage, and acquire advantages from governments and other tourism-related

global organisations (e.g., taxes and access to financing), while also responding to the needs of customers to meet sustainability goals.

Sustainability also plays a critical role in the food and beverage sector (Ocampo et al., 2021). Sustainability practices in hotels can enhance customer satisfaction, increase competitiveness, and restaurant performance (Cantele & Cassia, 2020). Customer loyalty can be achieved through sustainable development (Maynard, Zandonadi, Nakano, & Botelho, 2020). Boas, Botelho, de Almeida, and Zandonadi (2021) argue that purchasing from local communities is essential for restaurants to develop in the region and contribute to the local economy, and contribute further to social and environmental sustainability. Veganism for instance is being considered as one of the main trends in contemporary food consumption, even in a country that exports animal protein such as Brazil (Niederle & Schubert, 2020).

The fear of costs and low awareness of practical methods are some of the reasons for restaurants' failure to initiate friendly environmental practices (Maynard et al., 2020). In this vein, Cantele and Cassia (2020) indicated that environmental law and the cost-benefit imbalance of environmental systems can be barriers to sustainability. However, adoption of enterprises for environmental management systems and green human resource management is forced by stakeholders' growing ecological awareness (Khan, Wei, Yue, Nazir, & Zainol, 2021).

In the times of the COVID-19 pandemic, sustainability has been the subject of great importance in hospitality, with more concern about its social dimension (Ramkissoon, 2020b; 2021a; b; 2022; Šerić & Šerić, 2021). Pelikanova, Cvik, and MacGregor (2021) found that COVID-19 can motivate people to think more about sustainability issues (Ramkissoon, 2021c) including multi-stakeholder engagement, corporate social responsibility, fight for a competitive advantage in the COVID-19 and post-COVID-19 eras. Arora and Mishra (2020) argued that the way to tackle pandemics in advance, such as COVID-19, is to go all out to achieve the targets of environmental sustainability. Even though COVID-19 has offered a vision of a more sustainable future (Lima Santos, Cardoso, Araújo-Vila, & Fraiz-Brea, 2020), this vision may pose a major challenge for the hospitality sector and for many of its traditional clients (Jones & Comfort, 2020).

Owners may see sustainability as a trendy concept that is unclear for businesses, particularly small and medium-sized enterprises (Fonseca & Carnicelli, 2021). There is a need for policy frameworks at international, national, and institutional levels to engage in social responsibilities (e.g., corporate social responsibility, sustainability, and sustainable development) (Fonseca & Carnicelli, 2021; Samkange et al., 2021). Sustainability is highly contested in both academia and practice it is not clear what managers mean by sustainable tourism goals (Albrecht et al., 2020). Although Sin, Mohamad, and Lo (2021) exhibited that the importance of sustainability in the tourism and hotel industry has increased lately, it remains ambiguous and needs more academic research (Olya, Altinay, Farmaki, Kenebayeva, & Gursoy, 2021).

Sustainability means different things to different people, and its management is somewhat volatile with varied evidence in support of diverse viewpoints in the hotel context (Oriade et al., 2021). Importantly, Calisto et al. (2021) affirmed that there is a need for a more holistic approach to sustainability to establish a deeper understanding of sustainable business decisions in the hotel sector because this is scarce in the literature.

Despite the importance of sustainable practices during crisis times, such as COVID-19 and post the pandemic (Counted et al., 2021; Pelikanova et al., 2021) and the struggle, ambiguity, and volatility in both academia and practice regarding sustainability in tourism and hospitality (Albrecht et al., 2020; Oriade et al., 2021; Sin et al., 2021), scholars argue there is a need for a more holistic approach to sustainability (Calisto et al., 2021; Nunkoo et al., 2021). This is further evidenced by increasing academic interest in sustainable practices (Cantele & Cassia, 2020). We argue that it is imperative to provide a comprehensive review of the sustainable practices literature in the hospitality industry. There is a need to review how previous scholars have approached this topic and how it should be investigated in the future. To date, according to the authors' knowledge, there is no systematic literature review for sustainable practices research in hospitality, including hotels, restaurants, motels, casinos, nightclubs, resorts, and food service operations. Prior systematic reviews have addressed other disciplines, such as manufacturing (Qureshi, Khan, Qayyum, Malik, Hishan, & Ramayah, 2020), business schools (García-Feijoo, Eizaguirre, & Rica-Aspiunza, 2020), and agriculture (El Chami, Daccache, & El Moujabber, 2020).

Our systematic review was also initiated on the recommendations of Lima Santos et al. (2020), who recommend future research to conduct systematic reviews on sustainability in tourism and hospitality. Our review assists hospitality enterprises to adopt sustainable practices because their adoption is one of the most significant challenges that firms face (Mzembe, Idemudia, & Angel, 2021). Furthermore, not all companies have committed to the sustainable development goals' targets to-date, putting at risk the success of the United Nations agenda (Stombelli, 2020).

The lack of systematic reviews addressing sustainable practices in the hospitality industry evidences the need to conduct our systematic review to indicate research outlets or journals that publish sustainable practices research in hospitality. In a similar vein, our aim is to create a knowledge map of existing research on sustainable practices within the COVID-19 and hospitality contexts, so that we can better understand and identify gaps in knowledge and practices. We critically reflect on what and how to continue researching in order to contribute to better sustainable practices in hospitality. To address this gap and sense of urgency, our systematic review examines research published thus far in the field of sustainable practices during COVID-19, and hospitality. The research identifies what we know about sustainable practices during COVID-19 and hospitality, what we don't know, and why and what we should know by identifying and proposing priorities and propositions for future research agendas by being reflective and critical. We explore the research contexts and illustrate sustainable practices in hospitality research. Based on our review, a strategy for extending future studies by both theoretical and empirical development is presented. With four overarching questions in mind, we approached our literature analysis as follows:

1. *What are the research outlets or journals that publish sustainable practice research in hospitality?*
2. *Which hospitality sectors are analyzed in sustainable practices research?*
3. *What is the classification of sustainable practices in the hospitality context?*
4. *What is the future course of sustainable practice research in the hospitality context?*

We developed a comprehensive approach to assisting hospitality establishments in determining whether or not they are sustainable. To determine whether an article should be included in our review, the criterion was that the focus needs to be on sustainable practices as a key variable or subject area. Hence, conceptualizing different sustainable practices is critical.

Methodology

The principal purpose of our systematic review is to present an overview of the current state of sustainable practices research in hospitality and highlight gaps for future research. **Figure 1** illustrates the detailed systematic review process performed in our research within distinct phases drawing on previous studies (Arcodia, 2017; Chon and Zoltan, 2019; Yang, Khoo-Lattimore).

We used the keywords "*sustainable practices*" and "*sustainability*" in combination with a set of keywords related to the sector (*hotel, restaurant, motel, casino, nightclub, resort, foodservice, and hospitality*) to investigate studies related to sustainable practices in the hospitality industry during COVID-19. This set of keywords ensures comprehensiveness and enables reaching data saturation in the search of new papers (Saunders et al., 2018). The search was performed on the WoS database, which is a comprehensive database of articles with detailed bibliographic information. WoS is a leading database with 171 million records, over 34,000 indexed journals, 1.89 billion cited references, and over 119 years of backfiles (Clarivate.com, 2021). As a result, WoS is frequently used to conduct systematic reviews in a variety of fields, including tourism and hospitality ((Paul & Criado, 2020).

119 articles were found in the WoS database (publication year 2020 and 2021) and were screened to eliminate duplicates. Hereafter, the subsequent eligibility criteria, reading the abstract, and the conclusions of each paper were included:

- The focus is on sustainable practices in the hospitality industry.
- English is the language used.
- Simple access to the article via the author's email university

For the subsequent analysis, 31 studies published in 2020 and 2021 were suitable for the latter. Each of the 31 articles was analyzed independently in detail by reviewing the abstract, literature, research methodology, results, and conclusion. We focussed on the year 2020 and 2021 since research on sustainability in the COVID-19 and post the pandemic is being increasingly sought (e.g., Arora &

Mishra 2020; Jones & Comfort, 2020; Lima Santos et al., 2020; Pelikanova et al., 2021; Šerić & Šerić, 2021). Furthermore, there is a growing demand for sustainable business practices. However, evidence on how sustainable investments perform during crises, such as the COVID-19 pandemic compared to regular investments remains scant in literature (Shields, Ajour El Zein, & Vila Brunet, 2021).

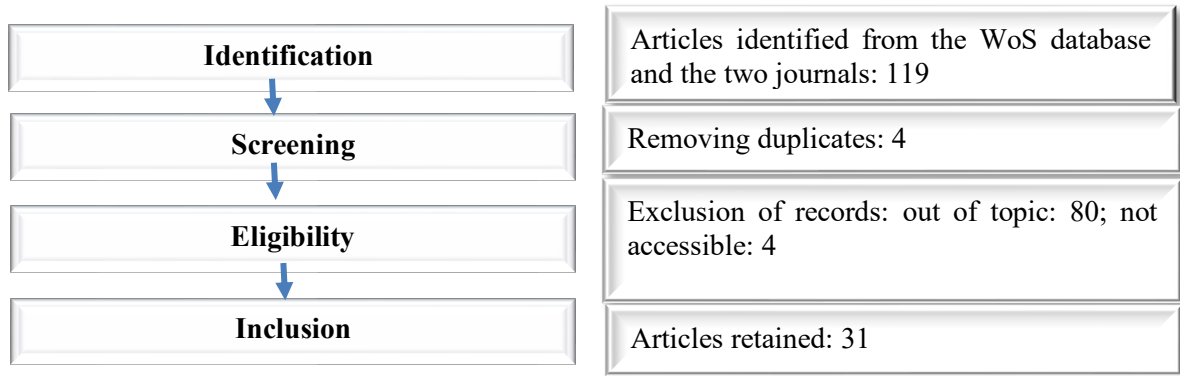


Fig. 1. Literature search process was adopted from Chon and Zoltan (2019), and Yang et al. (2017).

Review findings

To illustrate our research questions, we have structured the analysis part into three central sections. Precisely, we (1) illustrate research outlets or journals publishing hospitality sustainable practices research; (2) provide a review of research contexts in hospitality research, and (3) indicate sustainable practices in hospitality research. Based on a review of the findings, we present and recommend an agenda for expanding future research through both theoretical and empirical advancement.

Research outlets publishing sustainable practices research in hospitality

Sustainable practices research in hospitality has attained a base in multiple various outlets (see **Table 1**). In 2020 and 2021, research on sustainable practices in hospitality has been published in top-tier hospitality journals namely; Worldwide Hospitality and Tourism Themes, International Journal of Hospitality Management, Journal of Sustainable Tourism, International Journal of Tourism Research, Current Issues in Tourism, Tourism Management, and European Journal of Tourism, Hospitality and Recreation, with 2, 2, 1, 1, 1, 1, and 1 publications, respectively.

The majority of the articles (19) appeared in environment, production, food science, human resources, economic, and service journals such as; Sustainability, Journal of Cleaner Production, and International Journal of Gastronomy and Food Science gained the greatest number of publications, with 9, 2, and 2 publications, respectively.

Table 1 Journals (select) publishing hospitality leadership styles research year (n=31)

Journal	No. of studies
Sustainability	9
Journal of Cleaner Production	2
Worldwide Hospitality and Tourism Themes	2
International Journal of Gastronomy and Food Science	2
International Journal of Hospitality Management	2

Research contexts in sustainable practices research in hospitality

Figure 1 categorizes the papers according to hospitality sectors. Most of the articles concentrated on hotels (64.6%), followed by restaurants (29.0%). None of the studies were conducted in motels, casinos, and nightclubs sectors.

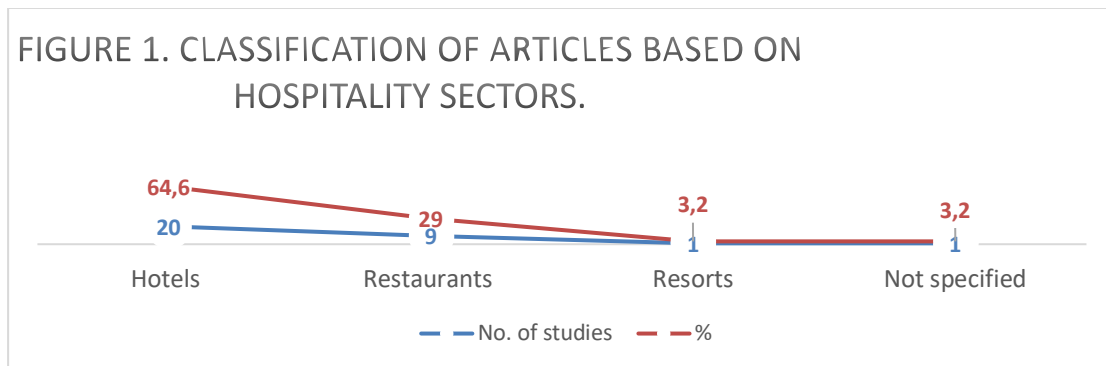


Table 2 summarizes the areas of study. The majority of the studies were conducted in Brazil (16.1%), followed by Malaysia (9.7%), Sweden (6.5%), and Portugal (6.5%). Only three (9.7%) studies were conducted in the Middle East (Egypt, Jordan, and Lebanon).

Table 2

Areas of studies.

Location Country/region	Number of studies
Brazil	5
Malaysia	3
Sweden	2
Portugal	2
Egypt	1
Jordan	1
India	1
Athens	1
South Sardinia	1
Romania	1
Himalayan region	1
Australia	1
East China	1
Serbia	1
Ghana and Nigeria	1
Italy	1
Netherlands	1
Scotland	1
Lebanon	1
Spain	1
Kazakhstan	1
Not specified	2
Total	31

The dominant sustainable practices in hospitality research

As shown in **Appendix 1**, sustainable practices across the extracted hospitality studies were very diverse. These practices were *environmental* (related to purchasing greener product, food sustainability, environment management systems, saving water, greener service process, energy saving, product life extension, product management during use, recycling, waste management, and pollution control), *social* sustainability practices were related to (employees, consumers, community, suppliers, and government), *economic* sustainability practices were related to (revenue growth, cost control, and market share growth), sustainable *accounting* practices, sustainable practices related to *sanitation and hygiene*, and sustainable practices related to *building design and construction materials*.

Alberton et al. (2020) concluded that hotels have implemented organizational sustainability strategies and practices that include saving water and energy, replacing lamps, recycling, and maintaining an ecological boat and an organic vegetable garden. Biodiversity conservation, water system technology, reusing and recycling of waste, green campaigns, hazardous material free, energy saving, and sustainable food dining are factors of sustainable development approaches and green practices in hotels (Hamid, Cheong, Shamsuddin, Azfar, & dan Teknousahawan, 2020).

Hotel managers were interviewed in the study of Oxenswärdh (2020) about their daily practice and work towards sustainable solutions at their hotels. The study findings reflect that they implemented sustainable practices and solutions, including putting garbage in a vessel and sorting it into 17 different sections; saving water; using signs on towel use; energy-efficient (no heating in the rooms when no guests are present); sheets not being changed so often; leftover food going to biofuel; using signs on sustainability measures in all the rooms; at the pool on the water use and the reuse of

towels; and hiring an eco-labeled laundry. However, there was no internal training on environmental issues due to short employment contracts.

A study by Fonseca and Carnicelli (2021) conducted in a family hotel context showed that some family business owners were aware of corporate social responsibility and sustainability practices, which include recycling, food waste, disposal, energy, and water-saving, and were willing to implement these actions as established by the government agenda. Examples of sustainability practices emerging from some interviews with restaurant owners are as follows: the use of LED lamps, waste reduction, doggy bags for taking home food not eaten in the restaurant, use of local and seasonal products, selective waste collection, and vegan or gluten-free menus, as well as training of human resources about health and safety in food preparation and service (Cantele & Cassia, 2020).

A study by Abdou et al. (2020) was conducted in the Middle East and focused on identifying the role of environmental green hotel practices in achieving sustainable development. They showed the importance and implementation of sustainable practices in hotels, related to sanitation and hygiene, water-saving, reuse, energy-saving, and waste management. Duric and Potočnik Topler (2021) found that hotels implemented the following sustainable practices: waste minimization, waste disposal, emissions minimization, and reduction of energy and water consumption. On the contrary, Oriade et al. (2021) found that the reuse of towels, temperature control, and noise pollution reduction as sustainability management practices are not popular and not actively used in the studied hotels.

According to Calisto et al. (2021), environmental sustainability practices that were implemented in hotels include acoustic insulation, inviting guests to reuse towels and sheets to reduce laundry efforts, minimization of water consumption through flow reduction systems in taps, and reducing energy consumption by using solar panels, low-consumption lighting, and air conditioning specifications. Mehta and Sharma (2021) affirmed that hotels are committed to reducing their carbon footprint by implementing practices such as switching to electric vehicles, creating no-smoking zones, and reducing single-use plastic products. Importantly, the current environmental regulations applicable to the hotel industry are mainly concentrated on waste and hazardous waste management, which are standard practices in hotel operations (Khatler, White, Pyke, & McGrath, 2021).

Some scholars focused on a specific type of sustainable practices, such as Chan, Stephen, and Andi Kele (2021) who explored sustainable human resource practices in hotels that include creating a safe working environment, organizing relevant training, career advancement, rewarding creativity, career development opportunities, benefit packages, compensation, caring management culture, and recognition. Further, Saleh et al. (2021) indicated that hotels use income statements, budget, cash flow, reliability, high-quality information systems to reduce expenses, data, and financial statements in accordance with accounting standards and rules, and good creative accounts which means that financial accounts are approved by auditors.

Many scholars are focused on sustainable food practices. Ocampo et al. (2021) argue that to achieve food sustainability in restaurants, it is vital to focus on locality (local products) for quality, fresh, and seasonal products; reduce meat in favor of vegetables; use local foodstuffs; use organic foods; and recruit creative and knowledgeable professionals. In addition, Niederle and Schubert (2020) revealed that restaurants developed main practices concerning the promotion of sustainable

food systems, including using self-produced food, purchasing food directly from farmers, using organic food, boycotting non-healthy ultra-processed and transgenic food, and using ecological packaging.

A number of previous academics integrated environmental and social sustainability practices. For example, Pereira et al. (2021) investigated the adoption of hotels for environmental and social sustainability practices. They found that hotels implemented environmental practices such as energy efficiency measures, reducing water consumption, waste management, and prevention of CO₂ emissions. In addition, hotels implemented social sustainability practices such as buying food from the local region and an agreement with an association of parents and friends of the mentally disabled citizen to promote the integration of disabled people into working life.

Few research studies were more inclusive in studying sustainable practices. For example, a study by Modica et al. (2020) investigated the economic, social, and environmental sustainability practices of the hospitality sector. Economic sustainability practices were divided into a number of subcategories, including revenue growth, cost control, and market share growth. Governments, suppliers, communities, consumers, and employees are among the sub-dimensions of social sustainability practices. Ultimately, environmental sustainability practices were categorized into environmental management systems, pollution control, recycling, product life extension, product management during use, and greener service processes. Shi and Tsai (2020) further demonstrated that corporate sustainability practices implemented by hotels were economic, social, and environmental.

However, there is a difference between the two studies regarding economic sustainability practices. For example, according to Shi and Tsai (2020), promoting local products among customers, contracting preferentially people who live locally, choosing suppliers that promote local development, offering employee salaries that are not below the industry average, evaluating the economic impact of the establishment, and encouraging customers to contribute to solidarity initiatives are corporate sustainability practices that could be implemented by hotels, while economic sustainability practices were divided into subcategories including revenue growth, cost control, and market share growth in the study of Modica et al. (2020).

Based on Olya et al. (2021), environmental sustainability practices implemented by hotels were energy and water saving, use of solar power, and communicating the environmental policy to customers. Implemented social sustainability in hotels was related to the work environment, employee safety and wellbeing, customer orientation, quality, and information dissemination. In addition, implemented economic sustainability practices were related to high occupancy and net sales growth, competitiveness, and overall performance and success level. In a study by Maynard et al. (2020), a checklist was developed and evaluated to provide a tool to support restaurants with the implementation of sustainability indicators. 76 items were reached, and subdivided into three sections 1. water, energy, and gas supply; 2. menu and food waste; 3. waste reduction, construction materials, chemicals, employees, and social sustainability.

Agenda and call for future research

Drawing on the traits and patterns detected from the review, recommendations are presented for forthcoming studies. This section aims to provide an inclusive synopsis of future research potentials for sustainable practices, thereby providing important clues for scholars who desire to further examine sustainable practices in hospitality.

During the COVID-19 pandemic, it is acknowledged that there were several shortcomings in research contexts of sustainable practices research in hospitality. Several of the studies examined were conducted in Brazil and Malaysia. There are very limited studies on sustainable practices in hospitality from the developing and emerging nations as well as other developed countries, such as Spain, the Netherlands, Australia, Egypt, Jordan, Romania, and Scotland. These destinations are vital in the international tourism and hospitality sectors. Additionally, most of the sustainable practices have been conducted in hotels. Future research need to consider resorts, motels, casinos, nightclubs, and restaurants, specifically small and medium enterprises, targeting multiple sources including employees, customers, suppliers, and managers.

Our views are consistent with Alberton et al. (2020), who recommended identifying similarities and differences in hotel industry management, mainly regarding the competencies for sustainability. In addition, it is critical to analyze the antecedent variables of the managers' behavior concerning the competencies for sustainability in the hotel sector. It would also be interesting to have studies conducted both in developing and developed countries.

Our study reinforces the view of Khatter et al. (2021) and Ramkissoon (2020a) that further research is needed in the hotel industry to investigate all stakeholders' influence on environmentally sustainable policies and practices to obtain a deeper understanding. Furthermore, more research on stakeholder theory needs to be encouraged (Nunkoo & Ramkissoon, 2016) since its application in environmental sustainability practices from the perspective of hotel management is still limited. Our review recommends investigating the association between environmental practices and sustainability performance in different hospitality contexts and cultures. Additionally, it is critical to examine stakeholders' (suppliers, customers, community residents, and employees) demands' effects on the association between corporate sustainability practices and financial performance via environmental and social performance. This recommendation is in line with Shi and Tsai (2020).

Another line of research for upcoming research is to investigate how different consumer profiles and national contexts affect the significance of environmentally sustainable practices in the hotel industry. More research is required on the ethical aspects of sustainability in managerial decision-making "doing the right thing" (Calisto et al., 2021). Our study aligns with Sin et al. (2021), who recommend future research to examine the impact of quality management on business ethics and sustainable performance, and the impact of business ethics on sustainable performance in different hotel classifications such as business, resorts, foreign, and domestic. In addition, government support and technological advancement could be studied as moderators in future work.

Our review also suggests investigating sustainable human capital practices by adopting mixed methods or quantitative methods of data collection. Sustainable human resource management practices can also be expanded by adding factors such as demographic changes, government

regulations, and technological advances. Future scholars can adopt other theories related to human resources management, such as Maslow's model or Herzberg's two-factor theory. This is in line with Chan et al. (2021).

A critical area for future research is to explore further sustainable practices that are more resilient to being implemented by restaurants because of COVID-19 (Ocampo et al., 2021). In addition, it is recommended to explore sustainable practices in various hotels (Duric & Potočnik Topler, 2021; Salem et al., 2021). Our study reinforces the view of Karagiannis and Andrinou (2021) that further research is needed to investigate sustainable factors and their relationships with customer satisfaction, future intentions, and destination loyalty. Future research is critically needed to focus on customers' perspectives on restaurant quality in combination with safety and security issues in a second wave of the COVID-19. It is critical to examine the difficulties that are faced by restaurant managers to adopt sustainable procedures and gain customers' trust.

There is a further need to understand the implementation, benefits, and outcomes of environmental and social sustainability practices in hotels, specifically during the COVID-19 pandemic. A longitudinal study is recommended to better understand how the degree of implementation of sustainability practices affects the levels of performance achieved (Pereira et al., 2021). Additionally, further research could be dedicated to investigating sustainable practices implementation in the foodservice sector (Maynard et al., 2020) and the effect of psychographic factors, such as age and gender, on restaurant owners' implementing sustainable actions (Babat, 2021).

Our review recommends highlighting the association between hospitality businesses' sustainability practices and consumer attitudes and behaviours with the moderation effect of consumers' socio-demographic characteristics. In addition, further research is also encouraged to examine the positive outcomes of each sustainability practice and the cost, type, and number of sustainability practices that should be adopted in restaurants or hotels. This is in line with the recommendation of Modica et al. (2020).

There is a further need to investigate sustainability attitudes and barriers and their effects on sustainability implementation in the hospitality sector, such as hotels and upscale restaurants. Additionally, our review recommends highlighting the effect of sustainability implementation on firm performance with the mediating role of image, reputation, and employee commitment and the moderating effect of market positioning. This suggestion is consistent with Cantele & Cassia, (2020).

Further research is encouraged to examine the indirect impact of environmental regulations on hospitality firms' sustainable performance. Additionally, future research needs to be dedicated to identifying sustainable manufacturing practices adopted by small and medium hospitality enterprises and how such sustainable manufacturing practices allow hospitality enterprises to gain competitive capabilities pertaining to product cost, production flexibility, product quality, and delivery. This suggestion is in line with Ali, Chen, and Hao (2021).

Future scholars could also investigate the role of corporate social responsibility in the hotel industry in achieving sustainable development goals (Ramkissoon et al., 2020). Furthermore, it is critical to explore the challenges and barriers that face hotels in accomplishing sustainable

development goals, especially for small and medium-sized hotels. Our recommendation is consistent with Abdou et al. (2020).

A starting point for future research is to investigate tourists' perceptions of sustainable tourism and the practices implemented in the hospitality industry (Madar & Neașu, 2020). Additionally, upcoming research is critically needed to examine the effect of consumers' demographics, such as education and gender, on the perceptions of sustainability in hotels (Olya et al., 2021). Our study reinforces the view of Mzembe et al. (2020) that further studies are needed to investigate customers' perceptions of green certification schemes and their tendency to reward hotels that earn green certification. In addition, we confirm the importance of examining sustainability and financial performance outcomes associated with adopting green certification schemes.

Due to the importance of implementing building sustainability in the hospitality industry, our review suggests that research on energy sources such as hydropower, solar, and wind to optimize building sustainability is required. This suggestion is consistent with Bhochhibhoya, Pizzol, Marinello, and Cavalli (2020). Future scholars need to investigate the association between management practices, organizational culture, and sustainability awareness in hotels within developing and developed countries' contexts. Our recommendation is consistent with Oriade et al. (2021). Further research is critically needed to examine employees' knowledge and training on sustainability issues at hotels. This is in line with Oxenswärdh (2020).

Due to sustainability being a multidimensional construct, there is further need for future scholars to study sustainable practices in the hospitality industry by concentrating on different dimensions, such as those related to environmental, economic, and social issues (see Appendix 1). Future studies could examine the association between hotels' communication strategies that are mainly focused on environmental sustainability and consumer willingness to book a room with the mediating role of three dimensions of perceived brand authenticity, namely, continuity, credibility, and symbolism. This suggestion is in line with that made by Amatulli, De Angelis, and Stoppani (2021).

Sustainability and social media are two significant trends influencing the hospitality industry and society. Future studies could evaluate how sustainability cues transmitted through social media platforms affect attitudes and intentions towards travel products, in addition to how hotels can promote their sustainable practices via social media channels (Tanford, Kim, & Kim, 2020). Our review recommends exploring the impact of green marketing orientations toward sustainability in the hospitality industry in the COVID-19 and post the COVID-19 pandemic. This is in line with the recommendation of Ho, Tsai, Chen, and Lu (2021).

Practical implications for hospitality sectors

Our study has demonstrated the impacts of sustainable practices from prior research in hospitality and their links with contemporary issues in hospitality. Based on our systematic review of 31 articles in the hospitality sector, we now stipulate practical recommendations for the hospitality industry and practitioners post COVID-19.

It is critical for hotels to invest in sustainable strategies to serve society and business, minimize costs, raise the skill levels of their employees, and meet their target audience (Alberton et al., 2020). To support sustainability management in hotels, owners or managers should build and create a robust organisational culture (Oriade et al., 2021). Cantele and Cassia (2020) recommended restaurant entrepreneurs and managers include sustainability in their strategic purposes and business operations in order to proactively implement the sustainable development agenda. Environmental sustainability policies could be written formally by hospitality businesses to educate stakeholders on environmental sustainability and to provide concrete evidence of commitment (Khatter et al., 2021).

It is recommended for governments to encourage restaurants to adopt green practices via incentives (e.g., tax deduction grants and recognition) and by awarding restaurants that implement sustainable policies (Karagiannis & Andrinou, 2021; Khatter et al., 2021). Additionally, the government could support hotels to install biogas generators (Khatter et al., 2021). It is also advisable for the government to organize programs to increase potential tourists' awareness of the effect of tourism on the environment and the need for sustainable development of this sector (Ramkissoon, 2022). In addition, it is critical for local authorities to provide the economic agents working in tourism, and also tourists, with sustainable development practices applicable in tourism through consultancy activities and educational programs (Madar & Neașu, 2020). Non-governmental organizations need to raise awareness about ecological issues and how restaurateurs can be involved in eco-friendly initiatives (Batat, 2021). In addition, it is important for hotel associations to assist hotels that lack expertise in adopting environmental sustainability and provide them with awareness training on environmental sustainability (Khatter et al., 2021).

Waste management is a critical part of sustainable practices that should be implemented by hospitality businesses. Teixeira et al. (2020) concluded that the solid waste of restaurants could be used for composting to maintain environmental quality. Recycling remains vital to reducing food waste and for environmental preservation. Due to customers' preference for local and seasonal food and the "authentic taste" of each destination, it is recommended for restaurant operators and chefs to purchase and prepare it (Karagiannis & Andrinou, 2021).

Due to the importance of sustainability and social media for the hospitality industry and society (Majeed & Ramkissoon, 2021), hotels could promote their green activities as marketing tools by advertising the positive outcomes of their sustainable practices to encourage booking behavior. Furthermore, hotel employees should participate in ecological activities with their communities and promote these activities through advertising and social media. Positive environmental scenes at hotels could be transmitted through Instagram or posted on the hotel's Facebook page (Tanford et al., 2020). Marketing managers in hotels could spread information on social, environmental, and economic sustainable practices and promote their implementation through print and online channels. It is critical for hotel managers to raise awareness of their sustainability practices among guests to increase their loyalty (Olya et al., 2021).

Green human resources management practices are vital for hospitality enterprises to promote organizational citizenship behavior for environmental programs and motivate employees to work sustainably on a regular basis. Inadequate or non-existent sustainable practices could be the result of a lack of employee training (Khan et al., 2021). It is also critical to depend on personnel who know

the importance of sustainability and have an interest in working sustainably (Ocampo et al., 2021). Hotels could improve the social welfare of employees by providing training and advancement opportunities as a part of socially sustainable practices (Olya et al., 2021).

Sustainable buildings in the hotel industry could be designed by taking into consideration low energy, high thermal efficiency, use of energy-efficient stoves, use of local materials with proper insulation, use of renewable energy, use of heating stoves, and use of light bulbs. Furthermore, hotels could integrate novel technologies with traditional knowledge to achieve a truly sustainable building design (Bhochhibhoya et al., 2020).

Hotels could reduce carbon emissions by introducing a new set of long-term environmental goals, striving to continuously improve energy-and emission-related performance, carbon emission auditing and reporting of all buildings and facilities, adopting carbon disclosure initiatives more extensively, and supporting certified projects that invest in renewables (Mehta & Sharma, 2021).

Hospitality higher education institutions could produce multidisciplinary projects, adapt their courses and curriculum, and launch sustainability initiatives with the support of the administration, alumni, and community stakeholders, to make their graduates become the positive change agents of the future (Zizka & Varga, 2020). To prepare positive social change agents for the 21st-century workplace, it is critical for hospitality or leisure management programs worldwide to reconsider their undergraduate programs (Zizka, 2021).

Conclusion

The impetus for this study was shaped by the cumulative academic interest in sustainable practices, the importance of creating a comprehensive plan for the main focus of sustainable practices in the hospitality literature, what it should highlight post COVID-19, and the lack of systematic review for sustainable practices research in hospitality. Therefore, our study aimed to (1) indicate research outlets publishing sustainable practices research in hospitality during COVID-19; (2) provide a review of research contexts utilized in hospitality research; and (3) illustrate the dominant sustainable practices in hospitality. Ultimately, we presented and recommended a map for developing forthcoming research through both theoretical and empirical advancement post COVID-19.

To achieve these aims, our study reviewed 31 articles focused on sustainable practices in hospitality. Our review has demonstrated that sustainable research practices in hospitality have made progress in the years 2020 and 2021. However, there are conceptual and empirical overlaps among sustainable practices in hospitality. Additionally, hospitality sustainable practices research is restricted in research contexts. There is a lack of research on antecedents, outcomes, and integrating theories in studies. Our review has revealed that sustainable practices have not been rigorously examined in hospitality research. By following the guidance presented in this review, we expect to advance and maintain hospitality sustainable practices research to provide substantive insights into the context of hospitality sustainable practices over the coming years post COVID-19.

Limitations and future research

Due to the selective, observational, and retrospective nature of the systematic review (Petticrew & Roberts, 2006), the current study was not exempted from limitations. The search strategy

used to find papers published in WoS, the journal of "Sustainability", and the "Journal of Sustainable Tourism" about sustainable practices in hospitality was restricted to titles to boost the accuracy of the subsequent literature. Further research is recommended to modify the research strategy by applying three parameters: title, abstract, and keywords. Even though WoS is one of the most well-known databases (Paul & Criado, 2020), we recommend that future research includes Scopus and Science Direct. Future research could also provide statistical measures of previous outcomes by applying meta-analysis. Regardless of these few limitations, the current research is the first to systematically review different sustainable practices in hospitality studies during the COVID-19 pandemic.

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Sustainable practices	Authors	Sustainable practices	Authors
1. Environmental sustainability practices		2. Social sustainability practices	
<i>1.1. Purchasing greener product and food sustainability practices</i>		<i>2.1. Employees</i>	
<ul style="list-style-type: none"> Using natural cleaning alternatives (e.g. lemon juice, vinegar). Avoiding purchasing overly packaged products. 	Modica et al. (2020).	<ul style="list-style-type: none"> Engaging in employment diversity. 	Modica et al., (2020).
<ul style="list-style-type: none"> Sustainable food dining. 	Hamid et al. (2020).	<ul style="list-style-type: none"> Providing equal opportunity in the hiring, training, and promotion for women and minorities. Listening to employees' suggestions. Supporting all employees who want to pursue further education. Complying with labour legislation and employee contracts. 	Modica et al. (2020); Olya et al. (2021).
<ul style="list-style-type: none"> Reducing meat in favor of vegetables. Using local foodstuffs. 	Ocampo et al. (2021).	<ul style="list-style-type: none"> Treating all employees equally and respectfully. 	Modica et al. (2020); Shi and Tsai (2020); Stombelli (2020).
<ul style="list-style-type: none"> Vegan or gluten-free menus. Training of human resources about health and safety in food preparation and service. 	Cantele and Cassia (2020).	<ul style="list-style-type: none"> Providing training and development for employees. 	Modica et al. (2020); Chan et al. (2021).
<ul style="list-style-type: none"> Purchasing environmentally friendly products. 	Modica et al. (2020); Shi and Tsai (2020).	<ul style="list-style-type: none"> Providing all employees with proper and fair wages that reward them for their work. Creating a safe and healthy work environment. 	Modica et al. (2020); Chan et al. (2021); Olya et al. (2021).
<ul style="list-style-type: none"> Using natural products/materials for guests. 	Modica et al. (2020); Amatulli et al. (2021).	<ul style="list-style-type: none"> Benefit packages. Caring management culture. Recognition. 	Chan et al. (2021).
<ul style="list-style-type: none"> Using fresh, seasonal, or/and green products. 	Abdou et al. (2020); Maynard et al. (2020); Karagiannis and Andrinos (2021); Ocampo et al. (2021)	<ul style="list-style-type: none"> Recruiting creative and knowledgeable professional. 	Ocampo et al. (2021)
<ul style="list-style-type: none"> Purchasing organic certified food/products. 	Madar and Neaşu (2020); Maynard et al. (2020); Modica et al. (2020); Niederle and Schubert (2020); Shi and Tsai (2020); Pereira et al. (2021); Ocampo et al. (2021).	<ul style="list-style-type: none"> Implementing practices to reconcile work and family life. 	Shi and Tsai (2020).
<ul style="list-style-type: none"> Offering goods and services that have been procured from ethically oriented suppliers. Fair trade products and Marine Stewardship Council certified fish. 	Mzembe et al. (2021).	<ul style="list-style-type: none"> Providing employment for people with disabilities. 	Shi and Tsai (2020); Pereira et al. (2021)
<ul style="list-style-type: none"> Choosing suppliers who demonstrate their environmental responsibility. 	Shi and Tsai (2020).	<i>2.2. Consumers</i>	
<ul style="list-style-type: none"> Using ecological packaging. Using of self-produced food. Food purchased directly from farmers. 	Niederle and Schubert (2020).	<ul style="list-style-type: none"> Respecting the rights of consumers. Providing safe environment for consumers. Developing a fair pricing strategy. 	Modica et al. (2020).

<ul style="list-style-type: none"> Boycott of non-healthy ultra-processed and transgenic foods. Association of food to socio-cultural and sacred dimensions. Consumption of ecological products. 	Pereira et al. (2021).	<ul style="list-style-type: none"> Responding to complaints of all consumers in a timely manner. Treating all consumers fairly. Providing consumers with accurate and adequate information in making purchasing decisions. Providing consumers with high-quality services and products. Be consumer-oriented. Improving product quality and enhancing added value. 	Modica et al. (2020); Olya et al. (2021).
<ul style="list-style-type: none"> Educating staff on sustainability. 	Maynard et al. (2020); Calisto et al. (2021).	<ul style="list-style-type: none"> Fostering civic attitudes among the clientele. Encouraging customers to contribute to social initiatives. Having facilities for disabled people. 	Shi and Tsai (2020).
		<i>2.3 Community</i>	
<ul style="list-style-type: none"> Suppliers of products of animal origin have certificates that prove that animals are raised without the application of antibiotics or organics. Purchasing products of animal origin that have an animal welfare certification seal. Purchasing sustainable seafood. Using ecological cleaning products. Using environmentally sustainable hand cleaners in the bathrooms of customers and employees. Offering proven healthiest (less salt, sugar and oil) dishes. Offering a separate menu or substitutions to meet diet restrictions, such as gluten-free preparations, vegetarian cuisine, vegan menu, or preparations to meet religious restrictions. Not using ingredients or products with transgenic ingredients in its composition in the production of meals. 	Maynard et al. (2020).	<ul style="list-style-type: none"> Organizing activities for the local community. Encouraging employees to take part in various kinds of community and social events. Improving the quality of life of people in the community through financial support (e.g. donating money to the poor and disabled). Financially supporting education in the local community. Stimulating the economic development in the community. Providing financial support for community activities. 	Modica et al. (2020).
<ul style="list-style-type: none"> Using local products. 	Abdou et al. (2020); Cantele and Cassia (2020); Oxenswärdh (2020); Karagiannis and Andrinos (2021); Ocampo et al. (2021).	<ul style="list-style-type: none"> Donating goods that are left behind to aid organizations. 	Oxenswärdh (2020).
<i>1.2. Environment management systems and saving water</i>			
<ul style="list-style-type: none"> Using air purification equipment to make wasted air emissions from the central air conditioning have less pollutants. Monitoring water consumption. Installing water saving devices (e.g. flow regulators, waterless urinals). 	Modica et al. (2020).	<ul style="list-style-type: none"> Collaborating with an organization to give bicycles to students in developing countries so that they can more easily and quickly travel to school. Donations to food banks or charities to avoid wasting food from products suitable for consumption. Having initiatives to promote healthy eating education for the local community (schools, colleges, community groups). 	Stombelli (2020). Maynard et al. (2020).

<ul style="list-style-type: none"> • Installing grease interceptor to eliminate waste grease and food residues. • Using environmental information systems that allow information sharing and customized reporting. • Using a temperature control system. 			
<ul style="list-style-type: none"> • Evaluating the environmental impact of the establishment. • Using environment evaluation systems. 	Modica et al. (2020); Shi and Tsai (2020).	<ul style="list-style-type: none"> • Supporting local development and heritage conservation. • Actively fostering respect for the language of the territory. • Collaborating in social project. • Evaluating the social impact of the establishment. 	Shi and Tsai (2020).
<ul style="list-style-type: none"> • Using water-saving flush in bathrooms. 	Modica et al. (2020); Olya et al. (2021).	<ul style="list-style-type: none"> • Donations to community. 	Maynard et al. (2020); Modica et al. (2020).
<ul style="list-style-type: none"> • Installing water saving devices / techniques / appliances. 	Abdou et al. (2020); Duric and Potočnik Topler (2021); Fonseca and Carnicelli (2021); Mzembe et al. (2021); Oriade et al. (2021); Oxenswärdh (2020); Pereira et al. (2021).	<ul style="list-style-type: none"> • Supporting community. 	Batat (2021).
<ul style="list-style-type: none"> • Minimization of water consumption, mainly through flow reduction systems in taps. 	Calisto et al. (2021).	<ul style="list-style-type: none"> • Buying food from the local region/suppliers. 	Maynard et al. (2020); Boas et al. (2021); Calisto et al. (2021); Pereira et al. (2021).
<ul style="list-style-type: none"> • Encouraging customers to save water • Using signs on sustainability measures in all the rooms. • Hiring an eco-labelled laundry. • An environmental meeting with staff. • Signing lists are available and applied for the staff in order to check up sustainable measures. 	Shi and Tsai (2020). Oxenswärdh (2020).		
<i>2.4 Suppliers</i>			
<ul style="list-style-type: none"> • Encouraging customers to contribute to environmental protection. 	Shi and Tsai (2020); Oxenswärdh (2020); Pereira et al. (2021)	<ul style="list-style-type: none"> • Choosing suppliers that demonstrate their social responsibility. 	Shi and Tsai (2020).
<ul style="list-style-type: none"> • Achieving universal and equitable access to safe and affordable drinking water • Using low-flow toilets and showerheads. • Reducing pollution and eliminating dumping. • Collecting rainwater and using it in garden irrigation or flushing toilets. 	Abdou et al. (2020).	<ul style="list-style-type: none"> • Paying suppliers for their services and supplies on time. • Establishing long-term partnerships with suppliers. • Bringing social responsibility into the supply chain management. • Informing all suppliers about organizational changes that affect their operations. 	Modica et al. (2020).
<ul style="list-style-type: none"> • Water system technology. • Deploying tools to conserve water and harvest rainwater. 	Hamid et al. (2020). Mehta and Sharma (2021).	<ul style="list-style-type: none"> • Sociability and non-market interactions with suppliers. 	Niederle and Schubert (2020).
<i>2.5 Government</i>			
<ul style="list-style-type: none"> • Preventive maintenance of the plumbing • In case of a water leak, performs immediate repair. 	Maynard et al. (2020).	<ul style="list-style-type: none"> • Obeying governmental regulations. • Creating partnerships with government agencies. 	Modica et al. (2020).

- Verifying that taps, when not in use and at the end of the service, are closed.
- The pressure of kitchen faucets, washbasins, and bathrooms is regulated and limited to allow water savings.
- Taps installed in hand or kitchen sinks have automatic activation.
- The water reservoir is adequately kept covered and conserved, and is free from cracks, leaks, infiltrations, peeling, and other defects.
- Not using running water to melt ice in sinks or thaw food.
- Removing dirt without water from utensils before putting them in the washing machine.
- Dishwashers are operated only at full loading capacity.
- When cleaning floors, the water flow is interrupted when it is not necessary to use it.
- Rainwater is collected and/or water from thermal counters that use water is recycled for use in activities where the use of drinking water is not required (e.g., flushing, washing outside areas)
- Educating staff on water efficiency

- Supporting governments' actions.
- Operating legally and ethically.

3. Sustainable accounting practices

- Income statement
- Budget
- Cash flow
- Reliability
- High-quality information systems to reduce expenses
- Data and financial statements in accordance with accounting standards and rules
- Good creative accounts which means that financial accounts are approved by auditors.

Saleh et al. (2021)

1.3. Greener service process AND energy saving

- Using compact energy saving fluorescent lighting. Modica et al. (2020).
- Using solar power instead of fuel. Madar and Neașu (2020); Modica et al. (2020); Amatulli et al. (2021); Calisto et al. (2021); Olya et al. (2021).
- Encouraging customers to save energy. Shi and Tsai (2020).

4. Economic sustainability practices

4.1. Revenue growth

- High dividend payment. Modica et al. (2020).
- High cash flow.
- High-profit growth.
- High return on assets. Modica et al. (2020); Olya et al. (2021).

<ul style="list-style-type: none"> • Documentation for the assessment and/or inspection of energy use for energy conservation. • Having smart energy meters. Check the energy meter. • Educating staff on energy efficiency. • Not using air coolers as it has natural ventilation to maintain thermal comfort. • The refrigerator and freezer doors have audible alarms for open doors or automatic locks. • The temperature of refrigerators, cooling chambers, and freezers are adequate and have a monitoring record. • Cleaning the air cooler filters with suitable detergents or contracts a third-party company for this service and changes the replaceable filters according to the manufacturer's guidelines. • Having lighting controls, such as sensors and timers, in low-occupancy areas (for example, in the distribution area) so that lights are automatically turned off when daylight is sufficient or when spaces are not being occupied. • Uses some form of renewable energy (wind, solar, or photovoltaic) in the production area. 	Maynard et al. (2020).	5. Sustainable practices related to sanitation and hygiene
		<ul style="list-style-type: none"> • Achieving adequate and equitable sanitation and hygiene
		Abdou et al. (2020).
		6. Sustainable practices related to building design and construction materials
		Implementing green building automation systems.
		Mehta and Sharma (2021).
		Paints used for building are environmentally sustainable.
		Maynard et al. (2020).
		Furniture made of recycled materials.
		Implementing building design to reduce carbon footprint.
		Amatulli et al. (2021).
		Bhochhibhoya et al. (2020).
<ul style="list-style-type: none"> • Maximizing air flow to reduce the need for air conditioning • Using thermostat control and organic air fresheners 	Amatulli et al. (2021). Modica et al. (2020), Oriade, Osinaike, Aduhene, and Wang (2021)	
1.4. Product management during use		
<ul style="list-style-type: none"> • Providing information on public transportation, walking and cycling routes. • Developing an environmental policy. • Promoting membership of environmental bodies/charities. 	Modica et al. (2020).	
<ul style="list-style-type: none"> • Communicating the environmental policy to customers. 	Modica et al. (2020); Olya et al. (2021).	
1.5. Product life extension		

<ul style="list-style-type: none"> • Re-using foil, paper, envelopes, and menus • Supplying guests with TV remote controls with rechargeable batteries. • Furnishing rooms with environmental-friendly materials. 	Modica et al. (2020).		
<ul style="list-style-type: none"> • Using rechargeable batteries for battery-powered devices and equipment, including flashlights, handheld vacuum cleaners, and others. • The furniture (tables, chairs, and others) is made of durable materials that can be repaired. • The tablecloths (if any) and/or employees' uniforms are made of organic or environmentally sustainable materials. 	Maynard et al. (2020).		
<ul style="list-style-type: none"> • Implementing linen, towel, and sheets reuse programs. 	Abdou et al. (2020); Calisto et al. (2021); Oriade et al. (2021).		
<ul style="list-style-type: none"> • Signs on towel use. 	Oxenswärdh (2020).		
<i>1.6. Recycling and waste management</i>			
<ul style="list-style-type: none"> • Using cloth napkins instead of using one-time paper napkins. • Using recyclable packing materials or containers • Avoiding items that are not recyclable. • Collecting and selling sorted waste and recyclable components. • Collecting hand-washing water to water plants. 	Modica et al. (2020)	<ul style="list-style-type: none"> • Cooking oil was separated and donated/transferred to recycling companies for making products such as soap. 	Maynard et al. (2020); Modica et al. (2020); Teixeira et al. (2020).
<ul style="list-style-type: none"> • Recycling waste. 	Abdou et al. (2020); Alberton et al. (2020); Hamid et al. (2020); Niederle and Schubert (2020); Fonseca and Carnicelli (2021); Mehta and Sharma (2021); Shi and Tsai (2020).	<ul style="list-style-type: none"> • Waste and hazardous/food waste management. 	Cantele and Cassia (2020); Calisto et al. (2021); Duric and Potočnik Topler (2021); Fonseca and Carnicelli (2021); Khatter et al. (2021); Mzembe et al. (2021); Pereira et al. (2021).
<ul style="list-style-type: none"> • Waste separation. 	Cantele and Cassia (2020); Pereira et al. (2021).	<ul style="list-style-type: none"> • Food leftovers management, such as leftover food goes to biofuel. 	Oxenswärdh (2020); Pereira et al. (2021).
<ul style="list-style-type: none"> • Putting garbage in a vessel with sorting them in 17 different sections. • Sheets not be changed so often. 	Oxenswärdh (2020).	<ul style="list-style-type: none"> • The amount of food waste composition was measured. 	Abdou et al. (2020).
<ul style="list-style-type: none"> • Purchasing food supplies in bulk to avoid excess packaging. 	Abdou et al. (2020); Maynard et al. (2020).	<ul style="list-style-type: none"> • Reducing single-use plastic products. 	Mehta and Sharma (2021).
<ul style="list-style-type: none"> • Reducing printing. 	Calisto et al. (2021).	<ul style="list-style-type: none"> • Using recycled products. 	Mzembe et al. (2021).
<ul style="list-style-type: none"> • Assessing food waste during food preparation. • Having options for smaller portions separately or a children's menu. • Assessing food waste during food distribution 	Maynard et al. (2020).		

- Discarding food waste in the form of composting, anaerobic digestion, maceration, donating to feed pigs, or establishing partnerships with cooperatives that carry out these processes.
- Training employees to avoid food waste during all stages of meal production, from the receipt of food to distribution.
- Carrying out smart ordering systems, inventory monitoring, inventory rotation and/or other inventory management strategies to avoid food waste.
- Separating recyclable materials, that is, selective collection.
- Using disposables and/or adopting strategies to minimize the use of these materials as much as possible, with documented goals.
- Adopting strategies to reduce the use of plastic in the distribution of meals.
- Recycling or reusing coffee grounds.
- Returning packaging boxes for suppliers to reuse and/or providing suppliers with their returnable boxes for the delivery of goods.
- Returning glass bottles for suppliers to reuse and/or properly disposing of these materials for recycling.
- Adopting measures to encourage customers to reduce waste (for example: maintaining glasses, reducing disposable packaging, and eliminating plastics or straws).
- Using recycled paper or FSC certified office paper.
- Using lamps, accessories, or furniture made from recovered or recycled materials or those provided with an environmental product declaration to improve the environmental impact.

1.7. Pollution control

<ul style="list-style-type: none"> • Implementing waste-disposal practices. • Reducing the amount of waste per guest night. 	Modica et al. (2020)	<ul style="list-style-type: none"> • Reducing operating noise volume as much as possible. • Having noise control system in place e.g. soundproof system in rooms. 	Modica et al. (2020); Oriade et al. (2021).
<ul style="list-style-type: none"> • Emissions minimization. 	Duric and Potočnik Topler (2021); Pereira et al. (2021).	<ul style="list-style-type: none"> • Minimizing of potential global warming gas (GWP) emissions, refrigerant emissions, to aid in the mineralization of waste and pollution. 	Sin et al. (2021).
<ul style="list-style-type: none"> • Selective waste collection system. 	Madar and Neașu (2020).	<ul style="list-style-type: none"> • Achieving zero greenhouse gas emissions with proven partnerships (e.g., commercial energy and vehicle fuel use). • Having a documented program to reduce carbon emissions (by at least 5% per year). • Reducing the use of liquefied petroleum gas. • Reducing the use of natural gas. • Increasing the use of biogas. 	Maynard et al. (2020).
<ul style="list-style-type: none"> • Using chemical-free housekeeping materials. 	Mehta and Sharma (2021).	<ul style="list-style-type: none"> • Hazardous material free. 	Hamid et al. (2020).

- Creating no-smoking zones.

- Reusing waste.

Abdou et al. (2020); Alberton et al. (2020); Hamid et al. (2020); Niederle and Schubert (2020); Mehta and Sharma (2021).
