

Improving Environmental Sustainability in Hospitality and Tourism: the Key Strategies

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Abstract: The Hotel and Tourism Industry has experienced profound changes in recent years and has been one of the sectors most affected by COVID-19. With the return of tourist activity, many companies went back to their normal routines, but the sector has changed dramatically. Tourists have new expectations, needs, and priorities, and sustainability is the one that is most emphasised, particularly when it comes to excessive water consumption, misuse of energy, and poorly utilised waste. The industry has a unique opportunity to recognise the importance of sustainability and define strategies to guarantee customer satisfaction, in symbiosis with environmental concerns and the preservation of the planet for future generations.

This study aims to characterise the good strategies and practices for environmental sustainability in Hospitality and Tourism, namely in terms of energy, water, and waste. The purpose is to present the procedures and processes that lead to greater sustainability performance and to accomplish this a focus group was organised, with 2 hospitality stakeholders, 2 environmental groups stakeholders, and 2 VET (Vocational Education and Training) stakeholders, to discuss and identify the main factors directly related to the excessive use of water and energy and the poor treatment of waste and ranked by the participants. The meeting was done face-to-face, lasted 3 hours, and was based on their expertise and good practices. The Hospitality and Tourism Industry is conscious of its ecological footprint, namely in terms of energy efficiency, water conservation, and waste management. Considering energy, some examples were given such as electricity-saving practices, using LED bulbs, occupancy sensors, and automatic light controls. With respect to water, it is mandatory to install low-slip faucets and shower heads, reduce laundry and cleaning, and recycle water that can be reused for irrigation or toilet flushing, reducing the use of fresh water.

The research presented contributions to the growing Knowledge on this topic, and the findings propose a straightforward guide for managers in the Hospitality and Tourism industry. Further research is endorsed to reinforce the value of environmental sustainability and to involve a greater range of stakeholders with different profiles in the sector.

Keywords: Energy, Environment, Hospitality, Sustainability, Tourism, Waste, Water

1. Introduction

The economic growth of tourism and hospitality all around the globe has caused major monetary, social, and especially environmental problems. There is a growing need to develop a collective effort among the various Tourism companies and stakeholders and it is crucial to introduce and deepen new knowledge about the practice of new sustainable behaviours, through the understanding of the main barriers and respective acceptance of responsible behaviours (Kasim, 2006). The tourism and hospitality industries should be focused on environmental sustainability and consumer behaviour is crucial to protect the environment, which in the end helps society and all humanity. Through this focus, new benefits will arise considering that this is a highly competitive market, where sustainability occupies an attractive place in business evolution and development of tourist destinations (Nicolau, 2008). According to Lim (2016) there is a constant challenge that hospitality and tourism academics, policymakers, and industry practitioners are faced with when dealing with the dense problem of sustainability. To Aryal (2020) sustainable tourism should reflect on economic, social, and environmental limits that allow sustainable development.

Yearworth (2016) states that the United Nations' sustainable development goals, which are scheduled for completion by 2030, call for more aggressive strategies and swift action to address the global issues that contemporary civilization is currently facing.

These days, being socially and ecologically conscious reflects a competitive advantage. The company might increase its profitability and set itself apart from rivals. Thus, businesses and even the government are searching for sustainable projects more and more. It is a paradigm shift and those who do not see it will be left behind by social pressure, client demands, or cost-cutting. Even customers have shown an increased awareness and concern for environmental issues, which has led to an increase in demand for green goods and services. Most travelers believe that choosing a hotel with eco-friendly policies is crucial. There is pressure on many industries

to go green to become more ecologically friendly. To Sakshi et al (2019) a large body of research has demonstrated that visitors are interested in sustainable hotels.

2. Literature Review

2.1 What is Sustainability?

Sustainability, in its widest sense, is the capacity to sustain or continue a process over an extended period. In commercial and policy contexts aims to keep natural or physical resources from running out so they can be used for a long time to come. According to Kuhlman and Farrington (2010) the 1987 Brundtland Report is credited with originating the idea of sustainability as policy. The contradiction between humankind's hopes for a better life and the constraints placed on it by nature was the subject of that document. The idea has been reinterpreted over time to now include three dimensions: social, economic, and environmental. Development is a multidimensional undertaking to achieve a higher quality of life for all people. Economic development, social development, and environmental protection are interdependent and mutually reinforcing components of sustainable development. A business must adopt what is known as "corporate sustainability" practices and policies to be considered socially and economically responsible. The objective is to promote steady growth that respects all sides of society and the environment, while also having minimal detrimental effects.

Lozano et al. (2015) assert that businesses and their executives have grown increasingly conscious of their duties and responsibilities toward the environment and society, for the benefit of present and future generations alike. As a result, a number of corporate voluntary tools and projects have been created to address sustainability, and industry and academia are collaborating more often to support the development of more sustainable societies.

The fundamental tenet of sustainability is that everything humans need for survival and well-being is reliant on the natural environment, either directly or indirectly, to support present and future generations. Creating and maintaining the environments necessary for humans and the natural world to live in harmonious productivity is essential, and it should motivate all businesses to work toward the Sustainable Development Goals.

2.2 Sustainability in Tourism and Hospitality

It is impossible to discuss sustainable development without mentioning tourism in its entirety. With its diverse range of applications, tourism is a multidimensional industry with notable emphasis on the environmental, sociocultural, and economic facets. This has the biggest flow of products, services, and people thinking about it globally (Lickorish and Jenkins, 2011). According to Sakshi et al (2019) in the tourism and hospitality sectors, sustainability has garnered special attention due to the industry's high energy, water, and non-durable product consumption as well as the possibility of hazardous emissions being released into the air, soil, and water from routine procedures. Since the visitor actively engages in the tourist industry by exploiting local resources and engaging with the location and destination, we believe it is essential to respond to visitor demand and raise visitor awareness of the inherent responsibilities of travel.

The creation of what is known as "social responsibility", which, according to Paskova and Zelenka (2019), entails the various aspects of tourism that are intrinsic at the local, regional, national, and international levels, is necessary for the building of a sustainable community. According to these writers, the tourism industry's implementation of social responsibility has given rise to a comprehensive and wide-ranging notion in terms of both its scope and content. The advancement of this social consciousness is emphasized by Paskova and Zelenka (2019), both on the supply and demand sides of tourism.

This is an issue that has long been present, as described by Webster (1975), a customer who practices social responsibility needs to be aware of every problem related to the sustainability paradigm, such as pollution. He should also be a person who, by acting morally, aspires to actively participate in the advancement of society and the wider globe. The article goes on to say that these people have outstanding educational backgrounds and solid financial foundations. Cheng and Wu (2015) examine environmental responsibility by examining how our understanding of environmental challenges and conservation efforts has evolved. According to these writers, one's degree of understanding of the subject encourages one to become more conscious of the preservation of nature. Furthermore, they hold that consciousness increases with attachment and empathy for a particular location. Su, Huang, and Jue (2018) examine the sustainability paradigm, which is founded on social responsibility and was created via cooperation between the various organizations that make up the tourism sector. This merger might lessen the adverse effects that this industry generates while it operates. As a result,

the diverse populations who inhabit the world may someday reap fresh benefits from this new collective mindset. According to Pulido, Andrades, and Sánchez (2015), the economic dimension ought to centre around sustainable development. Thus, it is believed that sustainability will be a key factor in the financial success of numerous tourist attractions. According to these writers, the green economy—which we refer to as economic sustainability—will be conceptualised over an extended period. The writers Aydin and Emeksiz (2018) argue that when it comes to the green economy, the ongoing backing of public institutions and governments is crucial in promoting the viability and flexibility of the many companies that are considering this industry. Additionally, it emphasizes the significance of a collaborative and strategically planned economy that depends on extensive technical and informational support from a variety of funding sources.

2.2.1 Sustainability in Tourism and Hospitality-good practices

Operating a hospitality or tourism business in a way that is in line with Agenda 2030 and the Sustainable Development Goals (SDGs) is known as sustainable hospitality and tourism. It involves considering not only the financial aspect of the business but also the effects that its operations have on society and the environment. According to Khatter (2023), the worldwide environment has been greatly impacted by the hospitality sector, and hotels and tourism companies that place a high priority on environmental standards not only support sustainability but also give their visitors a better overall experience. To Pereira et al (2021) consumers of hotels are beginning to understand the value of being environmentally conscious and anticipate that lodging establishments would use eco-friendly techniques. The hotel sector is known for using a lot of energy and natural resources to meet the demands of its customers. This industry is a major driver of the global economy and has a substantial impact on the environment and the economy. By implementing best practices aimed at reducing the industry's negative effects on the environment and society, the industry can take the lead in creating a more sustainable future. To Sloan, Legrand, and Chen (2022) the dynamic nature of the climate and the inherent uncertainty of future events make it difficult to assess the potential risks, viability, and financial repercussions of running a hospitality business. The hotel sector is nevertheless moving slowly when it comes to fully incorporating environmentally friendly practices into its day-to-day operations, even despite a wealth of advice and recommendations (Han, 2021) The hotel sector faces several obstacles in its efforts to implement ecologically responsible practices. For most sole proprietors and business owners in the hospitality sector, managing a small business daily can be a demanding undertaking. The consensus among operators is that quick fixes are preferable to long-term gains. Small business owners frequently voice concerns about their organisations' cash flow since it has a big impact on how they run their businesses. Many owners have the false impression that being green means spending more money. This phenomenon is typically explained by a breakdown in communication. Many operators require more time or are more eager to learn about this field because the observable results are not as readily apparent as they are for other problems they face. The main obstacles to attaining environmental sustainability include limitations related to time, money, and available resources. Financial gains, owners' interests, customer happiness, marketing advantages, and a dedication to environmental protection are the primary drivers of environmental sustainability (Khatter, White, Pyke, and McGrath, 2021).

2.3 How to Educate for Sustainability in Tourism and Hospitality

Dziubaniuk et al. (2023) claim that because schools train the future leaders of organisations—which are crucial players in bringing sustainability into society—they have a unique role to play in achieving sustainability development goals. The development of sustainable competencies should be the primary objective of sustainability education in schools, which calls for a more transformative approach.

The need to support growth that meets present needs without endangering those of future generations is growing. The current situation prevents schools from being viewed as nothing more than places where academic knowledge is dispersed and taken out of context. Adolescents must prioritise their development as whole citizens to equip them with the skills necessary to practice informed, accountable, and active citizenship when confronted with social concerns.

To ensure that they make informed decisions in their personal and professional lives, the younger generations need to prepare by acquiring core skills that align with sustainability. Education is without a doubt a vital instrument for attaining sustainable human growth. This compels the school to reorganise itself since it can no longer run its operations in the same manner as it has in the past if it is to prepare professionals who can meet the challenges of the future, if it wants to produce experts who can deal with both current and future problems.

Education systems ought to be ready for these developments, then. According to Tejedor et al. (2019), there are less than two crucial decades remaining to support the development of new methods for producing information and making decisions about sustainability, as well as to support educational frameworks for citizenry engagement and awareness. To meet the UN's sustainable development goals, schools have committed to, integrated, and implemented education for sustainable development into institutions, policies, and curricula. Nearly all international organisations focus on digital citizenship, digital competence, and digital skills. Therefore, teaching digital skills that will enable us to handle the demanding problems that organisations are confronted with in the market underpins the teaching of any subject, and sustainability is no exception. According to the DigCompEdu European Framework for the Digital Competence of Educators Report (Redecker, 2017), which outlines the digital competencies of educators, any course design must ensure that students acquire digital skills and that teachers use appropriate digital tools. For students to acquire the knowledge, skills, and abilities related to sustainability, they must have contact with the "real world". This method is gaining traction in classrooms and provides teachers and students with several benefits. Starting with a realistic and real-life situation instead of the traditional theoretical and abstract model that can help learners retain more information and may also present opportunities for them to develop sophisticated abilities like critical thinking, communication, and cooperation.

The goal of the courses should be to prepare students to deal with the challenges of sustainability in both personal and professional contexts and to become agents of sustainability.

3. Methodology

This qualitative and exploratory study aims to characterise the good strategies and practices for environmental sustainability in Hospitality and Tourism, namely in terms of energy, water, and waste. To achieve this objective, a semi-structured interview was used to conduct the focus group organised into three main domains: energy, water, and waste. The script had questions such as -How should energy efficiency be reported in your opinion? Should water consumption management be a priority for hotel management in the upcoming years?, Have you seen any good practices in water management being implemented? In what way were their impacts being measured? or How dependent is waste management on public or private waste management authorities?

The respondents for the focus group were chosen by Simple Random Sampling (SRS), and there were 6 participants, specifically two hospitality stakeholders, two environmental groups stakeholders, and two Vocational Education and Training stakeholders. All the participants were from Portuguese organisations.

The focus group met in a face-to-face environment and lasted three hours. The meeting was audiotaped and verbatim transcribed for the analysis. For data analysis, content analysis procedures were used (Bardin, 2001). All ethical procedures were considered during this study.

4. Results

Our results are organised into three main categories: **energy, water, and waste**, as presented below:

4.1 Energy

Regarding energy, our participants said that they control, on a daily basis, all the consumption of energy. The daily registration of energy consumption is made with the support of a technological tool, which identifies the consumption per equipment of the whole hotel, e.g., air conditioning, light bulbs, elevators, etc. This registration allows them to address four main issues:

- To know their energy efficiency potential, enabling them to set energy performance objectives/standards and implement appropriate measures.
- To draw up a set of measures to optimise energy efficiency in those components where there is significant energy consumption, to reduce the cost of the energy bill, and optimise consumer satisfaction.
- To act in a preventive way in terms of equipment maintenance, thus acting in a preventive manner, given that energy monitoring of all equipment daily will make it possible to detect any maintenance needs before a breakdown occurs and unnecessary energy costs are incurred.
- To detect any deviations in consumption, identify the causes more quickly, and correct the problem minimising energy costs.

Additionally, other strategies were mentioned, such as controlling the temperature in rooms, having light sensors in common spaces with less usage, etc.

The participants also consider important the renewal energy, it was mentioned that it is easier to adopt solutions in buildings built from scratch than in historic buildings (in Portugal there are some hotels installed in historic buildings). Nevertheless, they had already installed solar panels in the buildings where that was possible, and they have a project to build a photovoltaic power plant to supply energy to the group's hotels.

Finally, the hospitality managers highlight that being fully sustainable requires a big investment, and sometimes it is expensive, but if it is properly communicated it will bring huge benefits to the business since customers are becoming increasingly aware of sustainability and are already choosing hotels that they know adopt sustainability practices. In this way, the investment pays off by attracting more customers and ensuring their satisfaction.

According to VET stakeholders, they implement some measures related to energy consumption management, such as controlling the temperature of the rooms and water, and monitoring the energy consumption meters, among others. Moreover, they evidenced that the most important thing in their case is that trainees and trainers already have in their discourse the need to implement strategies to ration energy consumption, needs that are passed on to companies through the trainees when they enter the job market.

The Environmental Group participants showed their concern with energy consumption reduction for society and the role of each agent. They highlight initiatives implemented to promote sustainable habits, like the installation of several electric car chargers, and the construction of eco-roads that connect different cities.

According to VET, companies will constrain water consumption with water-saving policies, and access to water will be much more expensive and will have a beneficial effect with ways of recovering water for other purposes. Measures to prevent water consumption already exist, but according to VET these measures will become more common and more effective. As we have a very large coastline, desalination will have to be considered with rigor and quality, considering that we can get everything, especially water, from the sea.

4.2 Water

In the water category, the hospitality managers mentioned that municipal revenues needed to be tackled, for example, those who consume less should be rewarded, and good water consumption practices created. These measures include measuring consumption, measuring flows, reusing grey water, and using water from swimming pools for irrigation. The big issue is that all these measures require major investments, and structural work and are not always feasible. Moreover, it was referred that the management of drinking water is a priority and can already be used in many units. Daily readings are taken, and the values are recorded on internal maps. As for good practices, these include proper maintenance of equipment, devices, and installations to prevent water leaks and ensure their proper functioning. Hotels systematically record and analyse water consumption data, where possible through a centralized technical management system or based on water bills, to review and readjust, where applicable, the savings measures and targets to be achieved and to assess the effectiveness of the implementation of these measures. Most hotels carry out regular audits to identify improvement measures that will enable them to continually reduce water consumption and the energy associated with water use. The environmental group participants mentioned that there needs to be a commitment from all stakeholders. According to all participants, everyone's mentality and awareness must be modified, and the drought is mentally making people aware, and it often starts in families, e.g. brushing teeth while turning the tap off. The participants considered it is urgent to internalise these concepts and make them a routine.

4.3 Waste

Regarding the waste category, one hospitality manager said that they had full control of waste to see how much a person consumes. This is recorded daily in the hotel's internal system and uploaded to the portal monthly. The portal used is SILiAmb - Integrated Environmental Licensing System, which is a platform where citizens and companies can submit license applications and communicate data to the Portuguese Environment Association, fulfilling their obligations in the environmental area, namely submitting the waste registration map (<https://apoiiosiliamb.apambiente.pt/content/o-que-%C3%A9-o-siliamb?language=pt-pt>). Moreover, the hotel says that they make tracking sheets to accompany all the waste. The other entity says that it does not use any database to record the waste produced. In both cases, the main objective is to reduce, as much as possible, the amount of waste produced.

The VET participants stated that they sort and collect waste and do not keep any records. In addition, and in line with the Tourism 2027 Strategy, all courses raise awareness of the need to reduce waste and treat it properly. The environmental group participants highlighted the policies and practices aimed at separating and reducing waste. They point out that, in this sector, the collection of cooking oil is very important. It is essential to treat food oil to extend its value chain and prevent clogging of the sewage system and water contamination and to preserve the health of aquatic ecosystems. As well as preventing contamination of water resources, recycling this waste can give rise to various other products, for example, detergents can be made from recycled oil. Recycling cooking oil also makes it possible to create biodiesel, a less harmful fuel for the environment, as well as soaps and aromatic candles, contributing to the circular economy.

The aim is to find out what is produced and how much so that appropriate measures can be implemented. It should be noted that those who produce more waste are charged higher rates.

5. Analysis, Discussion, and Conclusions

This study aimed to characterise the good strategies and practices for environmental sustainability in Hospitality and Tourism, namely in terms of energy, water, and waste according to the vision of hospitality stakeholders, VET stakeholders, and environmental group stakeholders. Our main results were related to practices implemented by these groups for energy, water, and waste consumption and reduction.

Therefore, our main results suggested that the goal is to offer some best practices that various kinds of accommodations can use to help achieve the SDGs. The best practices were divided into the following groups to streamline their presentation and make it easier for the reader to recall the material: Energy, Waste management, and Water. The overall energy consumption and carbon footprint of the hotel will be decreased by using energy-efficient appliances (such as freezers, ovens, washers, and dryers) and lighting (such as replacing lightbulbs with LED lights). Programs for demand-side management aim to lower energy usage during periods of high demand. Using smart thermostats is one example of such a program. Smart Thermostats can regulate a room's temperature according to its occupant count or by providing incentives for visitors to use less energy. Contemporary sensors offer a cost-effective way to lower the overall energy used in lodging. For example, sensors put in windows and door windows can prevent the air conditioning system from operating while the first is open, and motion sensors can be used to turn off the lights and other equipment in unoccupied areas. A substantial amount of a hotel's energy usage is attributed to its energy-efficient heating, ventilation, and air conditioning systems, which may be made better by replacing them with newer, more efficient models or by caulking any leaks. Making use of renewable energy sources, as roofs, terraces, and facades all offer enough room for solar panel installation, which will lower energy expenses and help motels become less dependent on the grid. Selecting an energy supplier depending on the energy mix the provider uses is another strategy, to lessen heat gain and loss, install insulation and energy-efficient windows as needed and Install motion sensors to turn on and off the lights.

Three principles should guide waste management within the sustainability framework: reduce, reuse, and recycle. This means that cutting waste generation should come first. The generated waste should next be recycled (if possible) or repurposed (if not). Recycling should be done in accordance with national and/or local policies. If none of the options work, the garbage should be disposed of. Among the best approaches are cutting waste right at the source. The hospitality sector should prioritise preventing waste from being produced. Reducing waste output can be achieved by adopting paperless transactions, minimizing single-use items, and using less packaging. Another approach should be to recycle food leftovers. Food wastes can be composted to lower methane emissions, a significant cause of climate change. Composting can be done on the hotel property or by hiring a nearby composting company. Reducing the waste could be done by giving away unwanted goods, such as unwanted clothes, furniture, appliances, linens, and other items to hospitals or charity helps the community and keeps the donated goods out of the trash. Recyclable items such as paper, plastic, metal, glass, and others should be gathered separately and delivered to different recycling facilities. Many insights into the lodge's operation can be gained by tracking and reporting waste output and reduction. Establishing targets for cutting waste output enables hotel management to monitor development regularly and make policy improvements.

Considering the water, saving fixtures can be installed as one of the effective water management strategies, and water usage is decreased by water-saving fixtures like low-flow toilets and faucets. Every leak should be addressed as water is wasted in large quantities due to leaks. Hotels should inspect their water system regularly for leaks and address them right away. Another good strategy is rainwater collection - which is a practical

strategy for cutting back on water use. Rainwater collection can be utilised for laundry and other non-potable purposes, such as irrigation. The sustainability leaders should encourage people to use reusable bottles and the use of tap water and employ filtering equipment as necessary.

Our study had some limitations related to the reduced number of participants from each one of the groups and between the groups there were significant differences related to the kind of organisation. Further studies should have more participants and the organisations should be more identical allowing for a better understanding of each group. The good practices analysed were related with energy, water, and waste consumption and reduction, but there are other environmental sustainability strategies that could be implemented in the Hospitality and Tourism Industry. According to Pereira et al (2021) environmental practices used in the hotel industry can include, among others, the purchase of environmentally friendly products and the use of environmentally friendly cleaning products.

In conclusion, this exploratory study highlighted some important issues that should be addressed in sustainability in the hospitality and tourism sector and the need to maintain this issue in the stakeholders' practices and the requirement of specific policies in this field.

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