

Green Hotels and their effect on Urban Sustainability

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ABSTRACT

The environment and resources have been depleted as a result of increased urbanization and industrialization. One of the industries with the fastest growth in terms of economy is Tourism. Although it is beneficial in case of providing employment, business opportunities and also boosts the economy of the country. It also contributes to the environmental problems. The study revealed that about 2% of 5% of global carbon-di-oxide emission is by the tourism sector. A significant portion of the tourism sector is comprised of the hotel industry. As the hotel industry is resource intensive, it faces the challenge of energy conservation, waste management, and water management. On the other side, customers are looking forward to choosing eco-friendly practices, and the pressure is now enhanced on the hoteliers to adopt eco-friendly policies to achieve a green image to attract customers. Many Hotels have started sustainable growth strategies so that they contribute to social responsibility besides gaining profits. Apart from this government officials have to implement strict policies and guidelines in order to encourage the hoteliers to achieve sustainable goals. This paper summarizes green hotels, their challenges, their sustainable practices, green hotel rating tools, and their benefits for hotels.

Key words : Tourism, Hotel industry, Resource intensive, Environmental problems, Sustainable health management

Introduction

Due to the increased population, there is a wide range of utilization of resources such as water, land, fuels, etc. The injudicious utilization of resources to meet human needs concurrently leads to the degradation of climate, water, biodiversity, landscapes, etc (Abdel-Maksoud *et al.*, 2016).

In the present day, tourism is gaining a prominent role in the country's gross domestic product. Besides it, tourism promotion in a country pays a way to create employment opportunities, meet sustainable goals, and improve quality of life. As tourism has socioeconomic significance, many business

people tend to start their companies. In this context, Hotels are one such important industry where people prefer to stay, entertain, and recreate memories, meetings and conferences (Santos *et al.*, 2017).

Despite the fact that urban communities and metropolitan settlements cover under 1% of the planet's surface, they are the nexus of human movement obliging 54% of the populace and 70-90% of financial action. The level of the total populace living in metropolitan regions is projected to increment from 54% in 2015 to 60% in 2030 and to 66% by 2050 (UN's 2014). Metropolitan land cover is anticipated to increment by 1.2 million square kilometers by 2030, almost significantly increasing worldwide

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metropolitan land regions somewhere in the range of 2000 and 2030 (Seto *et al.*, 2012).

The predicted costs of direct health damage from climate change by 2030 range from US\$2-4 billion per year (i.e. excluding spending in areas that affect health, such as agriculture, water, and sanitation). In addition to current and rising global health costs, these expenses also exist. For instance, according to estimates from the World Health Organisation, the cost of mental illnesses would reach US\$2.5 trillion globally in 2010 and US\$6.0 trillion by 2030.

Although garden trees (and other vegetal forms) undoubtedly help to capture total pollution loads and urban trees are frequently highlighted as reducing aerial pollutants, new research reveals that very extensive belts of forests are needed to produce quantitative benefits. Consequently, household gardens may only contribute minimally to the reduction of point pollution sources like industrial facilities or highways (Cameron *et al.*, 2012).

Today, environmental deterioration is a serious concern due to the involvement of numerous industries worldwide. All sectors must participate and adhere to certain sustainable policies to preserve the environment for future generations in order to achieve the government's established goals for sustainable development. This paper focuses on green hotels and how it contributes to sustainability (Abdou *et al.*, 2020). According to Sidhoum and Serra (2017), stakeholders, especially CSR (Corporate Social Responsibility), are essential to sustainable development. Salem *et al.* (2017) conducted research on stakeholder participation in corporate activities related to sustainable development and found that it minimized environmental harm.

The first report aimed at supporting sustainable development was "Our Future" by the UN Brundtland Commission, which was released in 1987. The Brundtland Report, a publication of the World Council on Environment and Development (WCED; Emas, 2015), defines sustainable development as "Development that satisfies current needs while not impairing the capacity of future generations to satisfy their own needs" (United Nations general assembly, 1987p. 25; UNESCO, 2014a, p. 20).

The Sustainable Development Goals of 2030, a comprehensive and revolutionary effort with 169 goals including 17 SDGs, was authorized by the UN General Assembly on September 25, 2015 (United Nations, 2015; Bexell and Jönsson, 2017).

As a result, "an activity that satisfies the needs of

tourists while also being beneficial to the economy, the environment, and the people it serves, as well as its current and potential future implications on these factors" is defined as the development of sustainable tourism.

Traveling internationally should minimize the use of environmental resources, be successful and economically sound, respect society, and distribute the advantages to everyone who has an interest in it. Effective economic development requires a connection between social equality, economic prosperity, and environmental conservation. These elements are effective instruments for achieving sustainable development. The entire system cannot be supported if just one column is unstable. Job creation, income growth due to increased intervention, the creation of new jobs, and upgrading and strengthening the urban economy are all aspects of economic development (Agbedahin, 2019).

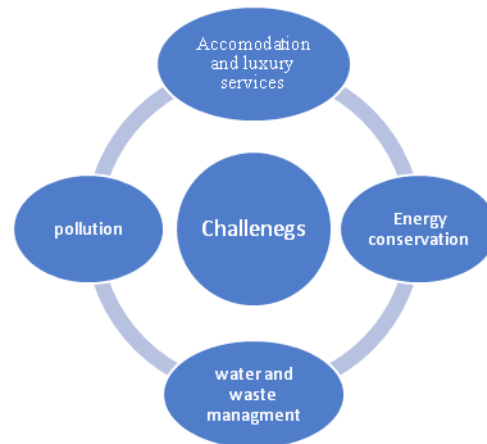


Fig. 1. Challenges faced by hotels.

Discussion

Challenges of Hotels

The term "green hotels" refers to "environmental hotels" whose managers have made a commitment to developing cost-effective energy, water, and waste reduction programmes. Due to the high demand for resources like water, light, and space, hotels must take into account resource depletion as well as environmental effects like pollution and climate change (Kasliwal and Agarwal, 2019; Singhal *et al.*, 2018). According to Kim *et al.* (2016), roughly 170-440 litres of water are utilized daily and 160-

200 kilograms of carbon dioxide are produced per square metre of space. Each visitor to the hotel generates about 1 kg of garbage. Therefore, the hotel sector needs to embrace eco-friendly policies to protect the environment for the benefit of the current and future generations (Deraman *et al.*, 2017; Fauziah *et al.*, 2017; Singhal *et al.* 2018).

However, the hotel and tourism industry has numerous choices to adopt such environmentally friendly policies (Singjai *et al.*, 2017). By incorporating environmentally friendly policies hoteliers have huge economic benefits in the long run as they save energy, resources, and money (Eskerod and Duric, 2018; Al-Aomar and Hussai, 2017; Singhal *et al.*, 2018). Although many hotels in the present day have adopted eco-friendly practices, still lot more effort is needed in this area to contribute to sustainability (Robin *et al.*, 2017; punitha *et al.*, 2015). Moreover, many customers today are opting for eco-friendly choices which increases the pressure on hotels to meet customer satisfaction (Robin *et al.*, 2017; Zhang *et al.*, 2017).

Case Studies

Kumar and Sheoran (2021) has carried out a study to throw light on the constraints of sustainable innovation adaptation by the hotel industry. In their study, they included Diffusion Innovation Theory (DIT) as an analysis for these limitations. Diffusion theory analyses hotel sustainability on the basis of parameters such as relative advantage, compatibility, simplicity, trialability, and visibility. The study extracts that there is a positive relationship between DIT (Diffusion innovation theory) and EMS (Environmental marketing strategies).

According to Schellenberg *et al.* (2020), the CPCB’s recommendations for surface water monitoring call for 25 parameters to be monitored during the pre-monsoon season and 11 parameters to be examined every two months throughout the remaining months of the year (CPCB, 2017). But this fre-

quency hasn’t actually been used because of capacity restrictions. Monitoring of four essential indicators-pH, BOD, TSS, and faecal coliforms-should be required to establish a good empirical foundation for future water quality models. The CPCB’s National Water Quality Monitoring Programme already collects data on BOD. The development of site-specific treatment protocols will benefit from the knowledge of surface water and groundwater volumes, seasonal flows, and treatment capacity.

A few notable green features included in some hotels include features that prevent water outflow, energy savings of 25–40% compared to typical constructions, a 40% reduction in the consumption of potable water, using disinfected grey water to flush toilets, air conditioning, gardening, by utilizing fly ash in bricks and concrete, high-efficiency machinery and environmentally friendly housekeeping techniques, according to the Amandeep (2017) study, both financial and environmental advantages come from making the company environmentally friendly. Promoting environmentally friendly practices can make a business stand out from the competition and attract new customers. If environmental impact is reduced, business sustainability will rise.

Verma *et al.* (2017) conducted research to study the relation of the tourist’s personality traits with the intention of visiting green hotels. 285 tourists made up the study’s sample size. The study’s conceptual framework took into account personality qualities like extraversion, agreeableness, neuroticism, conscientiousness, and openness. The study screened that Extraversion, agreeableness, Conscientiousness, and openness has shown a significant impact on the intentions of tourist to select green hotels. Whereas the impact of Neuroticism was found insignificant.

How Do Green Hotels Support Sdgs

Measures to conserve energy

Energy minimization has been highlighted as one of the most crucial environment management strate-

Table 1. Greenhouse rating tools in respective countries.

Green building rating tool	Country	Reference
LEED, Green globes	America	Abdulaali <i>et al.</i> , 2020
BREEAM	Netherlands	Abdulaali <i>et al.</i> , 2020
Green mark	Singapore	Abdulaali <i>et al.</i> , 2020
TGBRS India	India	Abdulaali <i>et al.</i> , 2020
Green building	Europe	Abdulaali <i>et al.</i> , 2020
Green star, Nabers	Australia	Abdulaali <i>et al.</i> , 2020

gies for the hotel industry. For various operational requirements, hotels typically utilize a lot of electrical and fossil fuel energy. The results of the literature review led to the adoption of numerous energy-saving techniques in the hotel industry. The use of goods with the Energy Star label, setting up of motion detectors that automatically switch off the lights in regions with little traffic, fixing triple-glazed windows or reflecting glass, the use of energy-efficient lightbulbs (LED), and reliance on natural illumination as opposed to artificial illumination are a few of these measures. Centralized monitoring system and consumption points have to be implemented to save power. Smart keys and motion sensors would help to save energy (Rosenbaum and Wong, 2015). Energy management systems and advanced technological equipment such as HVAC, wall temperature sensors, and EMS packages are being utilized by many hotels (Singh *et al.*, 2015).

Waste and water management

The accommodation sector of the hotels would produce lots of waste like garden waste, food waste, kitchen waste, etc, and dry waste such as cardboard, plastic, linen, paper, etc. All these wastes should be managed properly so that they would not harm the environment. For example, the first hotel in India to receive the ecotel certification, The Orchid Hotel in Mumbai has implemented effective waste management practices, such as building a vermicompost

unit to recycle the hotel’s food and kitchen waste. Also, the water taps were constructed in such a that they would save water (Sharma *et al.*, 2018). Similarly, The Fern Hotel Resorts and Palace have followed the usage of ayurvedic soaps, water-saving devices, and flushes, eradicating the use of plastic instead uses paper and cloth bags. Another hotel, The Raintree Hotel has implemented a flush system that it can flush out only 6 liters of water in one go whereas the actual system would release 20 liters of water by one flush. Water used for air conditioning at the hotel is recycled and used again. Once more, the water for the kitchen and toilets is heated using the heat from the air conditioner (Kasliwal and Agarwal, 2019).



Fig. 2. Benefits of green hotels as a result of sustainable policies.

Table 2. Some Green building rating tools and the aspects they consider to certify the buildings.

Rating tools	Areas of focus
LEED	Accessibility, location, environmentally friendly structures, water conservation, energy and atmosphere, materials and resources, indoor air quality, innovation, regional significance, and integrative techniques.
WELL	Food, light, movement, thermal comfort, sound, air, water, society.
FITWEL	Location, access to the building, outdoor space, stairways, inside atmosphere, work areas, communal spaces, water supply, and cafeterias.
GREEN GLOBES	Management of energy use, water use, waste disposal, emissions, indoor air quality, and the environment
BREEMA	management, health, transportation, utilisation of water resources, land use, and environment, as well as pollution.
DGNB	Environmental quality, social-cultural, function, technical, and process quality.
GREEN STAR	the state of the indoor environment, energy use, transportation, water use, land use, and emissions.
CASBEE	Environments indoors and locally, with regard to energy and resource efficiency.
BEAM PLUS	Site, water, materials, energy use, the quality of the indoor environment, and innovation.
BCA GREENMARK SCHEME	Environmental protection, indoor air quality, energy and water efficiency, and innovation.

Source: Sustainable Investment Group (SIG), 2020.

Construction material

Kasliwal and Agarwal, (2019) stated that the Raintree Hotel in Chennai has constructed its building with medium density Fibre, bamboo, rubber wood, and cement which has more proportion of fly ash which are the eco-friendly methods.

Some Green Building rating systems.

The assessing tools are green building rating systems, which will certify the building according to some major criteria such as water efficiency, thermal comfort, nourishment, sound, indoor environmental quality, and innovation.

When the hotel adopts some policies to achieve sustainability, it gains multidimensional benefits.

Conclusion

It can be concluded from the literature that few hotels have already been following Eco-friendly practices to meet sustainable development. But, till now only a few hotels have transformed which is not sufficient to meet the sustainable goals. Investing in green hotels is advantageous since they provide a means of enhancing the environment, creating employment opportunities, and lowering poverty. There are numerous certification tools and guidelines set by the government which would encourage hoteliers toward sustainable development. When government policymakers and hoteliers commit strongly, overall sustainable change can be accomplished. Since guests are the ones who actually use the hotels' resources, the hotel industry needs to run more awareness campaigns to win their support for its sustainable strategy. Thus, if the hotels could adopt sustainable practices, they can overcome the challenges related to energy conservation, waste management, and water management, which would reduce CO₂ and provide customer satisfaction besides gaining profits and a competitive advantage. If such type of practices will be adopted by the hotel industry, adopts some policies to achieve sustainability, and gain multidimensional benefits, and after that, a sustainable environment and human health can be managed.

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