Smart and Green Hotel

Green hotels refer to "hotels that tend to be more eco-friendly oriented through more efficient use of energy, raw materials and water while satisfying customers and providing quality services". The spotlight on "smart and green" has never been so bright and, within the hotel sector, emphasis on opportunities such as sustainability and digitisation are quickly shaping the agenda. In essence, integration between multidimensional approaches of "smart and green" as an emerging concept from numerous industries, including hospitality, plays a vital role. As such, a gap exists in relation to the hybrid model where both "smart" and "green" concepts are amalgamated in the hotel sector in Ireland as a combined image.

1. Green Hotels

Green hotels refer to "hotels that tend to be more eco-friendly oriented through more efficient use of energy, raw materials and water while satisfying customers and providing quality services" [1]. As such, green hotels are "a natural tourist lodging developed and managed in environmentally sensitive ways to maintain its business environment and provide guests with green products, green services, and healthy, refreshing, and comfortable accommodation that reflect the features of natural ecologies" [2]. It follows that green hotels typically benefit from reduced costs and liabilities, high return and low-risk investments, increased profits and reduced waste while saving money [3][4][5]. While more than 92% of users have positive feelings towards the businesses that follow environmental protection practices, gaining a complete understanding of what potential customers desire in green consumption is still a serious challenge for hotel marketers [2].

While the "green hotels" definition is common in the literature and widely accepted [6], there has been no universally defined rules, regulations or standards to classify a green hotel. Subbiah and Kannan [4] found that conservation of energy could be achieved significantly, for example, by installing energy-efficient equipment in all departments of the hotels and changing hotel operations and maintenance practices. As a result, there are a growing number of hotels investing substantial resources in environmentally-friendly practices such as reducing waste, minimising energy consumption, generating renewable energy, low-flow faucets and shower heads, choosing green suppliers, and adopting recycling practices [7]. There is no doubt that concepts such as green and sustainable practices are gaining traction in the modern world and informed-consumers no longer accept just linen and towel reuse programs as being green enough in hotels [8]. Increased consumer demand and behavioural change for sustainable goods and services are creating new challenges and opportunities for organisations in all aspects of business [9]. The United Nations' [10] and the European Commission's [11] policies underpin this issue, suggesting that green or eco-friendly products/services have gained great relevance in response to increased consumer sensitivity to concerns for a continuously deteriorating environment [12]. Interestingly, Millar, Mayer [13] opine that although many green hotels have formulated environmentally friendly practices, they have not been strictly followed, therefore, in reality, the "green hotels" concept suffers from a lack of well-targeted goals and objectives. While consumers' awareness could be elevated via effective green marketing campaigns, some hotels simply use the term "green" as their marketing image [12][14] without any policy or strategy in place. Accordingly, the inappropriate utilisation of these so-called environmental claims is known as "green washing", a term for unsubstantiated claims about good environmental policies [14] that are not in place in the first instance. In such instances of greenwashing, customers might feel sceptical towards the environmental claims and do not behave positively toward the business [15]. As such, a green trust programme is important to gain customers' trust and reduce perceived mistrust risk [16]. The literature reveals that green trust is defined as "a willingness to depend on a product or service based on the beliefs or expectations resulting from its credibility, benevolence and ability about environmental performance" [17].

Consequently, the degree of trust consumers have in green hotels will influence their booking behaviour of a particular green hotel [17]. Chen, Bernard [18] agrees, suggesting that greenwashing has a significant negative influence on green trust, which in turn negatively affects the revisit intention of prospective clients. In addition, it is found that there is a positive relationship between guests' overall satisfaction level and hotels' genuine green practices and the guests' return

intention and behaviour towards a hotel [19]. In a similar vein, Choi, Jang [6] found that consumers' behavioural intentions were influenced positively by green trust, which is consistent with previous studies [17]. To address these factors and avert confusion, credible green hotel certifications from renowned agencies like Green Seal, LEED, Green Globe and Energy Star is an ideal way to avoid the image of greenwashing and increase green consumer trust [18]. Additionally, communication strategies that enhance green trustworthiness and make an emotional connection with the customers could potentially lead to greater willingness to pay a premium for green hotels [7][20]. On the other hand, whilst guests may be willing to engage in green practices and price premium, they do not want to experience low product quality, inconvenience or discomfort [21]. Customers expect advancements in their accommodation provider in parallel with policy led world advancements being progressed by the European Commission [11], and besides recognising the importance of green hotels, Bowen and Morosan [22] also found that the adoption of artificial intelligence technology in the hospitality industry will be a disruptive game-changer, particularly in the hotel sector; however, synergies exist between all these concepts.

2. Smart Hotels

As technologies have become more ingrained into our society, hotels are also utilising these modern technologies more than ever [23]. Competition, especially in the hotel sector, forces hoteliers to be innovative and creative, necessitating differentiation in the marketplace [24]. Hotels looking to have an edge where appropriate, use terms such as "smart hotels" referring to an "integrated concept which includes an automation control system, based on modern information technology, a sophisticated set of sensors and actuators, optical or any other source of speedy communication facilities and protocols, wireless technology, integrated renewable energy sources, modern waste treatment technology and constant education and training of all hotel employees to achieve its successful implementation" [25]. In fact, smart hotels entail the implementation of a range of technologies, including artificial intelligence (AI), robotics, cashless payments, augmented reality (AR) and virtual reality (VR) to varying degrees, propelling a range of disruptive changes and client behaviour [26].

With advancements in technology, travel, tourism and hospitality, companies have started to adopt robots, artificial intelligence and service automation (RAISA) in multiple formats, such as chatbots, delivery robots, robot concierge, and conveyor restaurants self-service information/check-in/check-out kiosks [27]. Digitalisation and advances in areas such as automation, location-based contextual services, and artificial intelligence are disrupting industries and current models of operation; the hospitality industry needs to keep up with the pace of endeavours to improve efficiency by leveraging new technologies and automation [28]. Makridakis [29] agrees with an industry-wide movement towards increased data volumes and advanced algorithms, where AI, automation, and robotics technologies in hospitality businesses are strategically solving multiple daily challenges. Smart Room or intelligent room technology is an example of artificial intelligence widely used now in hotels [30]. Consequently, smart hotels have started rolling out room controls within their smartphone platform that enable guests to change the room temperature, lighting mood, TV, music, blinds and more, thus empowering guests in their personal hotel space [31]. Shedd [31] emphasises that this level of personalisation has never been possible previously and will change both the guest experience and behaviour and optimise energy consumption, emphasising the synergy between smart and green.

Undoubtably, virtual reality (VR) is rapidly becoming a creator of new tourism experiences—as a source of information, entertainment, education, accessibility and heritage preservation [32]. Virtual reality (VR) is a set of technologies that allow a user to wholly immerse in an artificial environment, such that sensory perceptions (somatosensory, vision, sound and touch) are manipulated by the experience arising from screen-based technologies, haptic devices and exoskeletons [33]. Ercan [34] insists, for example, that virtual reality applications used in marketing the image of smart hotels, make it possible for guests to take virtual tours of cultural heritage sites around the world where smart and green align again and reduce the carbon footprint in a green way. Buhalis, Harwood [33] support this and believe that tourism and hospitality organisations should use VR to permit clients to experience tourist sites and images through virtual tours and pre-arrival experiences of hotel facilities. Additionally, individuals with mobility impairments can benefit from the use of VR to pre-test the accessibility of the destination in advance [35], hence improving the customer experience.

VRs now enable hotel managers and travel agencies to offer a virtual trial hotel experience allowing the customers to obtain a realistic expectation of their chosen hotel [36]. Supporting these concepts, Moorhouse, Jung [37] found that tourism marketers' perspectives of VR's potential as an effective marketing tool lie in its capability to positively alter travellers' behavioural intentions and perceptions through VR images. International tourism is poised to make use of virtual reality to promote attractive and positive images of a destination that increase visitor numbers, encourage economic development and make consumers' decisions more crucial in a complex and competitive market [38]. However, not all researchers concur and Griffin, Giberson [39] contradict Likholetov, Lisienkova [38] because their findings reveal that some of their

respondents did not behave positively towards VR and were not likely to travel in the next five years, nevertheless, they would still share information about the VR experience with friends and family, which is still positive. On the other hand, Guttentag [40] cautions that VR in tourism could lead an individual to believe that they had seen enough of a tourist site by "visiting" virtually. Although the novelty of VR experiences is exciting, it is also possible that the initial admiration of this new technology will wane [39]. Equally, many travel service providers are also met with challenges to undertake strategic investment decisions to leverage VR technology in order to influence consumers' travel behaviour, which can be costly [41]. Apart from the barrier of cost, the general consensus is that usability could remain a challenge to mainstream market penetration and thus, there is a need for greater adaptation of the technology for the optimal application of VR as a tourism marketing tool [42].

To clarify, robots, artificial intelligence, virtual reality and self-service technologies used in smart hotels could help to reduce operating costs, portray a positive brand image, provide targeted marketing opportunities, and generate a competitive advantage against other players in the market while advancing their green status [34]. In order to convince consumers to behave positively towards "smart and green" hotels, social media marketing plays an increasingly important role in hotels' marketing strategy [43]. In fact, Leung, Bai [44] agrees that user-generated content in social media could influence the decision-making process of customers who intend to book a hotel, illustrating the importance of social media marketing in the sector.

3. Application of Social Media in the Tourism and Hospitality Industry

Traditional marketing communications have experienced disruption, and a new pattern of multidimensional communications has emerged in recent times, where consumers find more integrity through peer opinions instead of traditional marketing channels [45][46][47]. As a result, informal communication seems to possess strong persuasive power for social network members [48]. In fact, social media has become a popular medium for information search in the tourism and hotel industry [49]. Consequently, Ong and Ito [50] suggest that social media marketing has sufficient power to change attitudes among consumers, which consequently affects the consumers' travel intention and their inclination to spread positive word-of-mouth travel experiences.

Research by Jashi [51] found that 87% of participants said online reviews impacted their hotel decision, 70% of participants trusted online recommendations, while only 14% of participants trusted advertisements. Seeler, Lück [52] confirmed the important role of social media and social media influencers in tourists' decision-making processes, but also postulated that social influence goes beyond these initial stages of inspiration and travel planning. Hence, if people have the right influential skills and competencies, the potential dissemination and reach of stories can result in them influencing millions of people, a situation that cannot be ignored by hospitality stakeholders [53]. Despite this, Zeng [54] argues that one major roadblock to hoteliers' attitudes towards extensive social media marketing and implementation are the extra costs associated with implementing social media analytics; they are reluctant to invest in such technologies and staff upskilling. Subsequently, Michopoulou and Moisa [55] report that high staff turnover in the hotel sector leads to the lack of a full-time designated person taking full responsibility for the hotel's social media. This contributes to an inactive account or a lack of consistency in terms of content posted, tone of voice and the style of posts. Moreover, Aswani, Kar [46] highlight that digital marketing on social media can have an undesirable effect if it is executed by untrained service providers, as the negative impact in the long-term is magnified due to the speed of spread.

While considering "smart and green" concepts, managers in green hotels should be cautious that environmentally favourable practices will not necessarily lead to an increase in environmentally conscious guest's intention to book Han, Hsu [56] if the hotel's intention is not explicitly communicated. In light of this, social media technology forms a set of communication and organisational tools that are increasingly gaining attention due to their potential to facilitate rapid and effective communication to the public [57]. Gil-Soto, Armas-Cruz [57] clarified that when guests are more informed about green hotel images as they search for a hotel's information on social media sites, more guests began to acknowledge the hotels' green practices and leave more positive comments about them. Thus, social media is an effective instrument for hotels to communicate their environmentally friendly behaviour to customers and to inspire them to be greener [57][58]. In the context of smart hotels, Michopoulou and Moisa [55] make references to the use of artificial intelligence in social media platforms such as chatbot and Facebook messaging to take in reservations. For instance, the International Hotel Group (IHG) and Hyatt Group have tried using Facebook Messenger chatbot to communicate with guests, while Best Western International, Accor and Marriott International have implemented the TripAdvisor Instant Booking system [55] to embrace a technological future.

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