

# **PATHWAYS FOR GREEN HOTEL DEVELOPMENT MODEL UNDER LOW-CARBON ECONOMY: A CASE STUDY OF SOFITEL HOTEL IN GUANGZHOU**

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## **Abstract**

In the context of global warming, worsening energy crisis, and inflation, the development of green hotels is to seize the strategic commanding heights of low-carbon economy competition. Using grounded theory, this paper takes Sofitel Hotel as an example, adopts the interview research method to analyse the problems encountered by the hotels in the process of green hotel development. Thus, the green ecological model of government-hotel-consumer joint management under a low-carbon economy is proposed. The government should increase publicity efforts and set up a guaranteed system. Hotels should strengthen green services, innovate green catering design, improve personnel training mechanisms, and ensure a secure transition to renewable energy systems. Consumers should improve green awareness and develop green consumption habits.

**Keywords:** Low-carbon economy, Green hotel, Grounded theory, Development model

## **INTRODUCTION**

The global climate warming for 2011-2020 was the decade with the highest temperature on record (Räisänen 2022). Compared with the pre-industrial average temperature, it exceeded 1.2 degrees Celsius. The deep-rooted contradiction between man and nature has become increasingly apparent. The energy problem is intensifying, people are exploiting unrestrained, excessive use of non-renewable energy sources, thus aggravating the energy crisis, and challenging global environmental governance (Smith et al. 2015).

The "Green Hotel Standard GB/ T21084-2007" revised in 2017 indicates that China's hotel industry is gradually catching-up with the global "green wave" (Li 2011; Duan 2019). From the "green, circular and low-carbon development" proposed by the 18<sup>th</sup> National Congress of the Communist Party of China to the "green development pathway to build a beautiful China" pursued by the 19<sup>th</sup> National Congress of the Communist Party of China, this shows that China attaches great importance to green development (Cuiyun and Chazhong 2020). The State Council in its 2021 guidelines on improving the green and low-carbon circular economy system, requested the hotel industry not to take the initiative to provide disposable products

and improve the level of green development. In 2021, in the guidance of the State Council on improving the green and low-carbon circular economy system, the hotel industry should not take the initiative to provide disposable products and improve the level of green development (Hsia et al. 2014).

In this context, the transformation of traditional hotels to green development is the general trend. Therefore, this paper takes Sofitel as a case study, analyses the development status of the hotel based on the grounded theory (GT), and provides constructive guidance and suggestions for building a green ecological model of "government-hotel-consumer" joint management (Gupta et al. 2019).

Sofitel, located in the heart of Guangzhou, has a total of 493 bedrooms and suites. The overall design style combines modern fashion with the romance of Paris as a representative of "French lifestyle", meaning to enjoy life and relax.

PLANET 21 (Green Project) was first introduced in the agenda 21 (Dodds 2019). The first phase was quite successful in terms of energy and water saving, with a 3.1% reduction in water consumption per guest and 6.7% reduction in energy consumption per room. The second phase plans to achieve a 30% reduction in food waste and the use of low-carbon materials in all hotel construction by 2020.

This study is divided into six chapters. Besides the introduction in the first chapter, chapter two focuses on literature review highlighting the importance of marketing orientation model. Chapter three explains the research methodology which included research structure, research object, research instruments, and the grounded theory. Chapter four analyses the results of the study. Chapter five discusses the strategies to develop a green hotel model under low-carbon economy. Chapter six highlights the broader implications of the findings and relates them to previous research. Finally, chapter seven concludes the study and presents the theoretical and managerial contributions, the limitations of the study, and recommendations for future studies.

## LITERATURE REVIEW

Chung (2020) uses stress perception theory to develop a green marketing orientation model and finds that green marketing can indirectly increase consumer loyalty to hotels. Hsiao et al. (2014) use the Delphi method to conduct surveys of government officials, academics, and hoteliers to establish an environmental management system for Taiwan's hotel industry. Chan (2013) surveyed Hong Kong hotel managers on their perceptions of different green marketing strategies and found that low-grade hotels preferred lean strategies and large-scale hotels preferred hidden or extreme strategies. Lütfi et al. (2013) proposed green hotel practices in accommodation facilities as well as in laws and regulations based on the over-sensitivity of the Turkish hotel industry to environmental problems. Analyzing consumer behavior in green hotels, Barber (2014) used psychological segmentation to divide respondents into different shades to determine their preferences for products and services and proposed strategies for different green consumer groups. Nimri et al. (2017) used a qualitative approach based on the

Theory of Planned Behavior to conclude that Australian travelers lack knowledge of environmentally friendly hotels.

Heng (2021) analyzed the impact of attitude, purchase intention, image, and word-of-mouth on green behavior from the perspective of consumer green decision-making. Chairunnisa (2020) used a questionnaire method to construct a model of the role of environment, perceived value, and trust on green hotel purchase intention framework. Assaker (2020) constructs a multidimensional model of green hotel service quality, perceived value, and satisfaction to examine the relationship between the variables and consumer loyalty. There are few studies on green hotel marketing and green consumer behavior, but studies looking specifically on how government and business influence green development have been relatively neglected.

This paper draws on the above research in formulating relevant marketing strategies, which enrich the theoretical support for the consumer of the green hotel development model. Liu (2021) proposed strategies to improve the security system, strengthen the green management of hotels and guide consumers to green consumption regarding the security system and green awareness. Zhu (2020) proposed counter measures to reduce labor, catering, and energy for green hotel awareness, cost, design, and safety in Wenzhou. Wang and Wang (2020) used literature analysis, case study analysis, and questionnaires to study the problems of green hotel management. Yu (2019) addressed the problems of green hotels in China from the perspective of hotels, employees, consumers, and outsiders. Tang (2018) investigated the Wudang Mountain Hotels and pointed out the problems of uncooperative employees, high hotel investment and low consumers' attention, and put forward corresponding measures to motivate consumers and employees. Yao (2015) analyses the roles of government and enterprises, demonstrates its feasibility through Marriott Hotel and proposes the influencing factors of green hotel development. Tian (2014) studied the role of circular economy in creating green and uses Pacific Hotel to argue its feasibility. Zhang (2014) proposed that China's green hotels are backward in thinking, insufficient green product development as well as no green brand formation, and put forward corresponding measures. Using action research method, Pan (2013) puts forward green management suggestions for leaders, funds and consumers based on hotel visits, inquiries, and interviews. Considering the current situation of green development in Anhui Province, Fan and Zhou (2013) recommended the government to formulate macro-policies about sustainable paths for enterprises in culture, training, and technology. Zong (2010) emphasized that the green concept should run through the whole operation of the hotel to achieve the tripartite benefit to consumers, hotels, and society. The above studies analyze the current situation of green hotel development in China from different perspectives, which lay the foundation for this research to construct a development model of green hotels in a low-carbon economy and to have a deeper understanding of the roles played by government, hotels, and consumers in the development process.

**Low Carbon Economy:** The low- carbon model of "low energy consumption and low pollution" can achieve a win-win situation for both the economy and society (Yusof et al. 2017; Mercade et al. 2019). Specifically, the government will take the lead in formulating relevant policies, mobilizing the participation of the whole society, promoting international cooperation to foster technological research, focusing on solving the problems of energy efficiency, reducing the consumption of high-energy raw

materials and greenhouse gas emissions (Corsten et al. 2013). Green Hotel : The hotel makes efficient use of resources to provide comfortable, natural, and healthy accommodation and services to customers without harming the environment, achieving a win-win situation for both the environment and the economy (Haldar 2007; Song 2013). In the process of its operation, the hotel carries out a responsible attitude towards the environment and society to the end, insists on scientific and rational use of resources, achieves cost savings, protects the ecology, focuses on green corporate image, and realizes the unity of economic, ecological, and social development (Rodríguez and Cruz 2007). Theory of Sustainable Development: Coordination, efficiency and equity are the key to sustainable development, requiring people use resources in a controlled manner and to be able to meet both present and future needs, focusing on economic efficiency, social equity, and ecological harmony (Kemp et al. 2005; Rajan and Sushil 2022). In constructing a green ecological management system under a low carbon economy, this paper obeys the principle of economic, social, and environmental coordination (Dorward et al. 2005).

Theory of Green Marketing: As a branch of social marketing theory, it emphasizes the diffusion of green concepts in all aspects of a company's operations (Peattie and Charter 1992; Cronin et al. 2011). In a narrow sense, it is environmental marketing focusing on the benefits between the environment, the company, and the consumer. In a broader sense, it focuses on corporate ethics and corporate social responsibility (Punitha and Rasdi 2013; Papadas et al. 2017), which requires the company to raise its awareness of green management and work with multiple parties, starting from consumers, to reduce potential damage to the environment. According to this idea, this paper analyses the problems in various aspects of Sofitel and proposes a positive strategy of win-win cooperation among government, hotel, and consumers. Sofitel has a certain awareness of green management by designing various green marketing activities according to its own characteristics (Bouncken 2002; Graziano 2021) as shown in **Table 1**, but further investigation is required for the development and implementation of the plan.

**Table 1. Sofitel Green Activities**

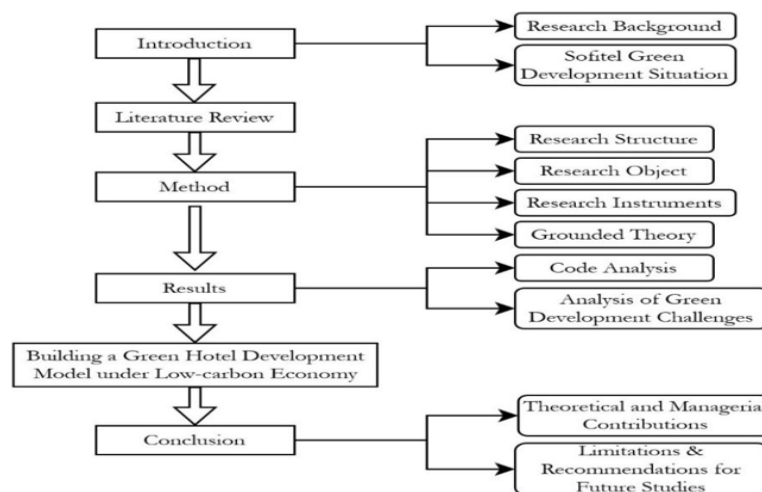
Name	Contents
Earth Hour	Light switches off at 8 p.m. on the last Saturday in March. Guests are invited to share a quiet hour in the lobby with eco-friendly snacks using seasonal fruits and edible flowers from organic farms.
Clean Plate Campaign	A month-long themed campaign on World Earth Day each year, advocating guests don't order more, staff don't take more, chefs don't cook more, and deliver the food saved to rural families.
Planting Design	Donations are encouraged through the purchase of saplings for friends and relatives, and the funds from the event will be sent to Quinglong County in Hebei Province to plant fruit trees and herbs, develop barren land with low utilization rate to create agricultural landscape.
Plastic Reduction Program	Replacement of disposable plastic vials for toiletries with biodegradable sealed bottles made from renewable plant materials such as corn and cassava.

Source: Authors

## METHODS

### Research Structure

Based on the environment in general of low-carbon economy, Sofitel is used in this study as shown in **Figure 1** (Research framework) to explore the green development of the hotel industry. Through the interviews using grounded theory methods, we investigate the current situation of green hotel development to analyse the issues in this study, exploring the new development model of green hotels in a low-carbon economy.



**Figure 1: Research Framework**

Source: Authors

### Research Object

Using grounded theory, this article's objectives include analysing the development status of the hotel and providing constructive guidance for developing a green ecological model of "government-hotel-consumer" joint management. The present study takes Sofitel Hotel as the research object. Thus, 10 employees and 5 guests of Sofitel have been interviewed to find out the problems in green development and use the grounded theory to analyse the interview data, which can prevent the interference of existing assumptions in exploring the dilemma of green development and make the research results more objective. The present research is an extension of prior work on promoting green hotel development.

### Research Instruments

While working at Sofitel, this research was conducted on the hotel's green development status through online and offline. The interview outline was designed around "the role of the government", "the actions of the hotel" and "the actions of customers", focusing on interviews with senior management, staffers, and customers of the hotel. The interviewees were given enough space to talk in a guided manner, and the focus was on the implementation of green efforts. Finally, a total of 15 participants were interviewed, and the effective interview time for

each interviewee lasts approximately 10 - 30 minutes, and the original material was later generalized to a total of more than 10,000 words. The saturation test was conducted using the interview texts of the 12<sup>th</sup> – 15<sup>th</sup> interviewees, and no new concepts or categories emerged in the analysed data, indicating that saturation theory was reached and the comprehensiveness and reliability of the sample data were ensured. The basic information of the interviewees was numbered one by one, marked as IV1, IV2 and so on, and the information of the interviewees was counted in terms of gender, age, position, and so on as exhibited in **Table 2**.

**Table 2: Respondents' Personal Information**

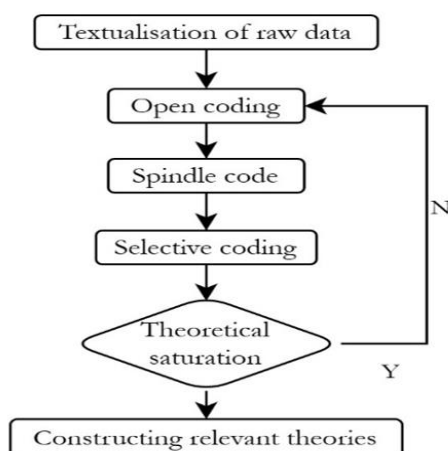
No	Gende	Age	Job	Years in employment
IV1	M	29	Steakhouse Staff	Three years
IV2		23	Chinese Chef Staff	One year
IV3	F	23	Lounge Trainee	Half year
IV4		28	Lounge Supervisor	Three years
IV5		23	Chinese Restaurant Trainee	Half year
IV6		26	Buffet Leader	One year
IV7	M	34	HR Manager	Six years
IV8		36	Club Manager	Five years
IV9	F	32	Room Supervisor	Two years
IV10		33	Training Manager	Five years
IV11		50	Company Staff	Two times
IV12	M	48		Permanent Residents
IV13	F	45		Five times
IV14	M	34	self-Employed	Three times
IV15	F	25	Student	One time

Source: Authors

### Grounded Theory

Grounded theory is a proven qualitative research method that decomposes, abstracts, and summarizes the original material in order to build a theory, characterized by a focus on the development of the phenomenon (Pandit 1996; Tarozzi 2020), which is used to analyse the problems in the development of French-owned five-star Sofitel Hotel case study and make the results more convincing. Specifically, open coding is the process of organizing the source material and then coding it one by one to generate initial concepts and refine the initial categories. Spindle code is to classify the initial categories, find the relationships between them and summarize the main categories (Savage 1976; Fletcher 2014). Selective coding identifies the core concepts through systematic analysis of the main categories (Moghaddam 2006; Holton 2007) and connects all the classes to them to build the theoretical model of this paper, as presented in **Figure 2**





**Figure 2: Steps of Grounded Theory**

Source: Authors

## RESULTS

Please, follow the instructions carefully; otherwise, you will be asked to resubmit the full paper. Thank you for your collaboration and contribution. Leave 2 blank lines between successive sections, subsections and/or sub-subsections.

### Code Analysis

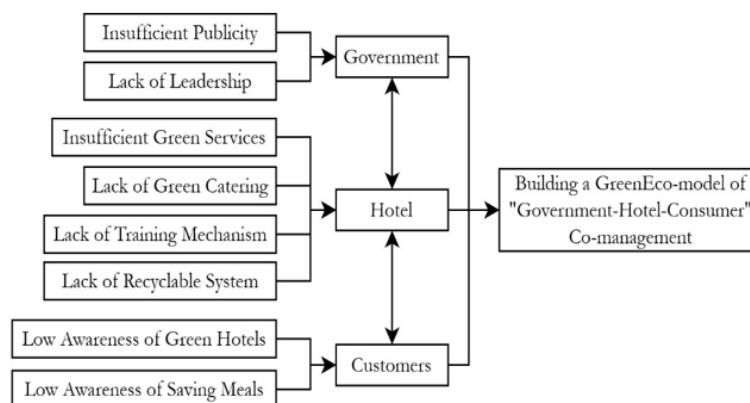
**Open Coding:** During the coding process, the respondents' original texts were coded sentence by sentence marked as A01, followed by A02... and so on. To reduce the influence of subjective factors, the original words of the interviewees were used to mark the initial concepts as much as possible, and a total of 60 initial concepts were counted on the given frequency of occurrence. Due to the large number of initial concepts and the subjectivity of the respondents, this paper chose to further generalize the initial concepts by using categorization. Initially, the data were filtered again to eliminate 23 initial concepts that appeared only once. Finally, 37 initial concepts were selected for categorization, resulting in 18 initial categories.

**Spindle Coding:** The process of coding is to find the logical relationships between the initial categories. In this paper, the links between the categories are explored by answering the questions of "what", "why", "where", "when", "who" and "how", thus forming the 8 main categories in this study.

**Selective Coding:** The 8 main categories formed through the spindle coding are all coded step by step based on the original materials, which more objectively reflect the problems in Sofitel's green development. Besides, the different problems are attributed to the actions that should be taken by the government, hotels, and consumers. Based on the Above-mentioned story line, this determined that "building a green ecological model of 'government-hotel-consumer' joint

management" (Butler 2008; Cerin 2019) is the core category of this study to summarize all the categories and the whole storyline, (Figure 3).

**Theoretical Saturation Test:** In this paper, saturation tests were conducted on interview texts 12-15 to ensure the veracity and reliability of the theoretical models analysed above. The test results show that the core categories of building a green ecological model of government-hotel-consumer joint management have been sufficiently refined, but no new main categories. Therefore, the model constructed in this paper is theoretically saturated.



**Figure 3: Building a Green Eco-Model**

Source: Authors

### Analysis of Green Development Challenges

Based on the aforementioned grounded theory, this research theoretically constructs the green ecological model of "government-hotel-consumer" joint management, and further explains the existing problems in the government, hotels and consumers based on this theory.

#### Government

**Insufficient Publicity:** The above grounded theoretical analysis also reflects that the public pays less attention to green development, and the relevant policies of green development have not affected the public's daily life (Leiserowitz et al. 2005; Cai et al. 2009). The government's publicity on green development is insufficient, and it has not been able to gain popularity and mobilize the public to devote themselves to the cause of green development (Lafferty 1996).

**Lack of Leadership:** The above grounded theoretical analysis points out that the government's leadership is insufficient, and it does not provide substantial material guarantees or corresponding incentive policies for the green development of hotels (Mycoo 2006). Specifically, under the influence of the epidemic, the development of the hotel industry is not optimistic (Chen 2010). Most hotels focus on solving the basic needs of survival. The government can intervene not only by implementing policies, but it should play its due role, strongly support the development and creation of green hotels (Butler 2008; Higgins-Desbiolles et al. 2019).



## Hotel

**Insufficient Green Services :** According to the above grounded theoretical analysis, "lack of green service" appeared 13 times. Most of the staff have little awareness of green services and fail to take the initiative to introduce the hotel's green design to customers in an environmentally friendly manner, such as the biodegradable supplies in the rooms and the "Save Food" sign in the dining area. As a result, many customers are not aware of the hotel's green design and cannot feel the green atmosphere.

**Lack of Green Catering :** The hotel uses organic fruits and vegetables in its green dining design and offers healthy meals made from fresh bamboo shoots. However, in the above analysis of grounded theory, "green dining" design is mentioned only five times, of which "green dining" is not very attractive appears twice, which shows that there are still shortcomings in the design of healthy meals.

**Lack of Training Mechanism:** According to the above grounded theoretical analysis, the initial category of "insufficient staff training" design appeared 9 times, which shows that the hotel lacks a green talent training system. As for the publicity of the hotel green project, it only mentioned the Group's PLANET 21 plan at the employee induction training meeting and did not systematically train employees and pay attention to the current situation of employees wasting hotel resources. Obviously, the implementation of the training mechanism is not effective.

**Lack of Recyclable System :** Sofitel pursues "luxury French lifestyle" and did not consider green issues at the beginning of its construction. Nowadays, the topic of low carbon and energy saving is getting more and more attention (Geels 2014; Konoplyanik 2020), and hotels should accelerate the realization of energy saving and environmental protection of facilities and equipment (Chan and Ho 2006). In addition, for the energy-saving design of the hotel, it is not enough to promote it only through activities such as "turning off the lights for an hour" and "switching off the lights willingly". Only by establishing a recyclable energy system can the problem of energy consumption be minimized to the greatest extent.

## Consumers

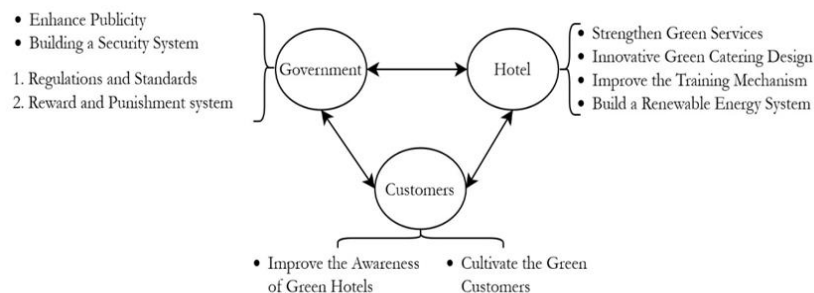
**Low Awareness of Green Hotels :** With the Central Committee of the Chinese Communist Party's emphasis on green development, the public's awareness of environmental protection has increased (Zhang and Wen 2008; Liu et al. 2012). However, data from the White Paper on Green Development in China's Accommodation Industry shows that public awareness of green hotels is still at a low level (Min 2011; Wang et al. 2018). 37.2% of the public are aware of green hotels, of which only 7.9% are fully aware of and have stayed in green hotels. Furthermore, in the above grounded theoretical analysis, when referring to "green hotels", all of them think of "environmental protection and conservation", which shows that the understanding of green hotels is too abstract. When asked about the reasons for choosing Sofitel Hotel, no respondents took "green hotels" into consideration, indicating a low level of awareness of "green hotels".

**Low Awareness of Saving Meals :** In the above analysis, "ordering on demand" appears six times when the restaurant has an à la carte system, proving that consumers have good green consumption behaviour. However, when a self-service system is implemented, the initial category of "buffet waste" appears four times, and since there is no price limit and no limit, consumers usually cause a lot of waste and the habit of eating economically is not fully developed, and the concept still needs to be changed.

## Building a Green Hotel Development Model under Low-Carbon Economy and Discussion

### Building a Green Eco-Model of "Government-Hotel-Consumer" Joint Management

The development of green hotels does not depend on the strength of one party but requires the joint efforts and mutual promotion of the "government-hotel- consumer". This paper takes the existing problems in the green development of Sofitel as the starting point, and further analyses the development model of green hotels in the low-carbon economy, and proposes that the government, hotels, and consumers should interact to jointly promote the development of green hotels, so as to achieve economic and sustainable development (Song 2013; Ahmed et al. 2021). The ecological model of the harmonious development of economy and ecology is displayed in Figure 4.



**Figure 4: The Green Eco-Model**

Source: Authors

### Government

**Enhance Publicity:** The government should always maintain its leading position and take practical and effective measures to promote the development of green hotels through extensive publicity (Graci and Dodds 2008; Watson et al. 2010; Ji and Li 2021). At present, the public is not familiar with "green hotels", which requires the local government and the community to work together to affirm the positive significance of the sustainable development of green hotels, so that more people can choose them. The government can organize mobilization meetings, use self-media platforms to promote green restaurants (Wang et al. 2013) and distribute brochures and implement the publicity to households, so that the public can truly understand the need for green development.

**Building a Security System:** The government should strengthen its organization and leadership, formulate relevant regulations and standards, enhance supervision and management, and set up a corresponding reward and punishment system, so as to improve the entire guaranteed systems. In terms of regulations and standards, local governments should take the sustainable development strategy proposed by the central government and the National Standard for green hotels (Yao and Steemers 2005) as the basis, formulate relevant regulations and policies for green hotels in the light of specific circumstances, and set up supervision teams to manage the daily operations of hotels. In terms of reward and punishment system, hotels that cause environmental pollution and fail to meet the standards should be punished and criticized as a warning to other hotels (Erkutlu and Chafra 2006). Hotels that take the initiative to implement green management should be praised and rewarded to set an example for other hotels.

## Hotel

**Strengthen Green Services:** Staff should actively guide consumers to pay attention to environmental protection. For instance, when helping guests to order, take the initiative to remind them to order reasonably to avoid causing a lot of waste. The hotel should strive to create a "green, healthy and comfortable" atmosphere and increase publicity through various forms (Guo and Yue 2021). With regard to activities, the hotel can cooperate with the community to carry out diversified, green-themed activities, so that every guest arriving at the hotel can feel the green atmosphere of the hotel and create a unique green cultural brand of the hotel.

**Innovative Green Catering Design:** To solve the problems of low acceptance of green meals in hotels, hotels should conduct a survey and analysis of consumers at the beginning of the meal design to understand their overall preferences and choose healthy ingredients that are generally accepted by the public (Chia-Jung and Pei-Chun 2014). In the process of meal design, attract consumers with personalized design to create a menu that becomes the first choice of consumers, such as allowing parents and children to design and create their own healthy meals.

**Improve the Training Mechanism:** Start with the hotel management to raise the hotel's awareness of green management (Fukey and Issac 2014), set up a hotel green commissioner to supervise the various affairs of the hotel's green development and put the green hotel development work plan into practice (Abdou et al. 2020). Focus on talent development and training programs, attract more staff to participate in them through diverse forms, such as debates and role-plays, so as to better establish the staff's awareness of green services, recruit professionals in green management, constantly update the hotel's green management concept and realize innovation in hotel management (Fraj et al. 2015).

**Build a Renewable Energy System:** Hotels should actively liaise with partners to promote the widespread use of energy-saving technologies and retrofit existing facilities and equipment to achieve clean energy and energy-efficient equipment (Perry 2017). Moreover, the hotel's lighting, air conditioning and other facilities should be arranged and used in a rational manner to create a low-consumption, energy-efficient hotel (Moe 2010; Huang 2016), such as the

Songshan Group, which have launched a "zero carbon" hotel program in collaboration with Schneider Electric, using a combination of fossil fuels, renewable energy and digital technology to establish a sustainable recycling system to achieve energy saving and emission reduction (Zhang et al. 2018).

## Consumers

**Improve the Awareness of Green Hotels:** Consumers actively learn about "green hotels" through new media such as TV, WeChat, and Weibo, recognizing the positive value of green hotel development to social development (Xie 2018; Yin et al. 2020). At the same time, by actively participating in the hotel's "green" promotional activities, constantly deepen their knowledge of "green hotels", enhance their own recognition of green hotel consumption and recommend their family and friends to experience the green hotel consumption concept (Trang et al. 2019; Nimri et al. 2020), thus forming a green social circle and expanding the popularity of "green hotels".

**Cultivate the Green Consumers:** Consumers can start developing the habit of buying and eating green products, eliminating waste, and using their power to influence those around them to pass on the right consumer values (O'Loughlin et al. 2020). In addition, hotel staff should provide guidance and encouragement to consumers and introduce corresponding incentives to reward consumers for positive green consumption behaviour during their stay at the hotel (Tsai and Tsai 2008), while the hotel will also impose corresponding penalties for excessive waste in order to guide consumers to actively participate in green consumption.

## DISCUSSION

This study analyses the problem of green hotel development based on grounded theory. A green ecological model of government-hotel-consumer joint management is constructed. The finding is in line with green marketing theory's focus on the benefits between the environment, the firm, and the consumer. What's more, the green ecological model of joint management constructed coordinates the principles of economic, social, and environmental integration and is consistent with the theory of sustainable development. The findings of this study show that:

Insufficient publicity and lack of leadership constitute problems in government's call for green and sustainable development (Chua and Oh 2011; Chen et al. 2017). This view is supported by the literature. Study showed that government support and publicity are insufficient, and the regulatory system is inadequate (Liu et al. 2021; Wang and Wang, 2020). To support the government policy, this study proposes countermeasures to enhance publicity and building a security system. This view is also backed up by numerous references to the literature; research has shown that the government is the promoter for green hotels development (De Oliveira 2002; Bramwell 2006) and strengthening support and publicity can make more consumers choose green hotels. (Gao and Mattila 2014; Wang and Wang, 2020). The study also suggests that each local government should develop relevant regulations and policies according to the present situation and set up a reward and punishment system (Liu, 2021).

Insufficient green services, lack of green catering, training mechanisms and recyclable system constitute the problems in the green development of hotels. This view is supported by the literature. Research has shown that the hotel green product development is not strong enough and has not yet become the preferred product (Schifferstein et al. 2010; Zhang, 2014). The study shows that hotels lack of green management awareness and professional green management talents (Chan, 2008; Ji, 2019) as well as the application of energy-saving and environmental protection materials in hotels is insufficient (Erdogan and Baris, 2007; Liu, 2021). In this sense, this study suggests countermeasures to strengthen green services, innovate green catering design, improve the training mechanism, and build a renewable system. Finally, we put forward some suggestions for how to effectively improve the utilization of energy in green hotels development (Lee et al. 2010; Liu, 2021). Low awareness of green hotels and low awareness of saving meals constitute the problems in the development of green consumer. This view is supported by the literature indicating that customers' awareness of green consumption is not strong. (Liu, 2021). As far as consumers are concerned, this study seeks to improve the awareness of green hotels and cultivate the green consumers as well as to increase green products consumption using new media (Ritter et al. 2015; Liu, 2021), eliminating waste and developing public awareness of green consumption. (Yao, 2015)

## CONCLUSION

The findings of this study identified eight major problems in the green development of this hotel: lack of publicity, poor leadership, inadequate green services, poor green catering, ineffective employee training mechanisms, lack of recyclable systems, and poor awareness of green hotels and poor awareness of green catering. Consequently, the main body of the problem was classified and attributed to actions to be taken by the government, hotels, and consumers in order to build a green ecological model jointly managed by the three principal actors. For the government, it should increase publicity and promote green development, establish a guaranteed system, improve regulations and policies, and develop a reward and punishment system. For hotels, they should strengthen green services and create a green cultural brand, innovate green dining designs to become the first choice for consumers, improve talent training mechanisms to update green management awareness and establish a recyclable energy system to achieve low-carbon emission reduction. For consumers, they should raise their green awareness and enhance their sense of identity, eliminate waste, and develop green consumption habits.

## Theoretical and Managerial Contributions

This paper selects Sofitel Hotel to enrich the empirical study on green hotels and lays a foundation for theoretical construction. For the difficulties encountered by Sofitel's green development, this study uses the grounded theory research methods to analyse the interview results, which makes the research results more objective and seek to improve the research methods on green hotels. Furthermore, the current academic research only opts for the three main types of actors, including government, hotels, and consumers to analyse the



countermeasures for the development of green hotels (Jiang and Gao, 2019; Cheng et al. 2017). This research innovates the theoretical research of green hotel management.

The international environmental situation is becoming more and more severe, and the development of green hotels is a positive reflection of the strategic layout of the Central Committee of the Communist Party of China. At present, the homogenization of products and services in the hotel industry is becoming more and more serious, and green development can save energy and reduce production costs (Butler, 2008), which is conducive to improving the competitiveness of hotels. Production cost is one of the effective ways for hotels to achieve differentiated development, which can help improve the competitiveness of hotels. Hence, the development of green hotels can effectively optimize the corporate image and improve the social effect of the hotel service industry (Kucukusta et al. 2013).

### **Limitations and Recommendations for Future Research**

Any research is subject to the question of validity and effectiveness and development of green hotels is no different. This study only includes Sofitel Hotel in Guangzhou, China and a relatively small number of hotels in its sample. Therefore, the generalizability of the entire industry should be done with caution. For the green eco-model of "government-hotel-consumer" joint management, more sample tests are needed later to ensure the reliability and replicability of the model. This paper uses qualitative research methods. Future studies should take into consideration the use of quantitative research methods to improve the quality of the findings, where a large number of data samples can be collected, and the constructed model can be further improved through strict quantitative analysis methods, so as to provide a more long-term sustainable development model for the development of green hotels.

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