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Exploring Recreationist-Environment Fit Hospitality Experiences of Green Hotels in China

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Abstract: To develop the hotel industry's competitiveness, research on satisfaction and revisit intentions has always been important. More research has recently focused on guests' pro-environmental behaviors and low-carbon management in the hotel industry. This research creates a recreationist-environmental fit satisfaction-revisit intention model based on the recreationist-environmental fit theory. This study surveyed seven green-standard hotels in Sanya, China, and tested the moderating effect of guests' environmental behavior on their satisfaction and willingness to revisit. Self-administered questionnaires were distributed to respondents who had visited the surveyed green-standard hotels. Two hundred and forty-five valid questionnaires were collected with the hypotheses developed and examined using the SEM and HMR methods. The results indicated that the suitability of a leisure environment could positively impact guest satisfaction, which positively affected their willingness to revisit. In addition, this study proved the moderating effect of guests' pro-environmental behaviors between satisfaction and revisit intentions.

Keywords: recreationist-environment fit; guests' satisfaction; revisit intention; guest' pro-environmental behavior; green-hotel

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1. Introduction

Global warming is a serious global issue that has attracted widespread attention from all sectors of society [1–3]. Scientists have concluded that natural variation or anthropogenic pollution can cause global warming, with humans contributing the most to it [4]. Furthermore, tourism is strongly linked to global warming [5]. On the one hand, global warming affects the tourism industry. For example, global warming is behind the rising sea level, which poses a considerable threat to the tourism industry in island countries [6,7]. On the other hand, greenhouse gas emissions from tourism also seriously affect global warming [8]. For instance, according to a report from the Cambridge Institute for Sustainability Leadership, greenhouse gas emissions from the tourism industry, as a proportion of global emissions, will increase from the current 3.9–6% to about 10% in 2025 [9]. In addition, the World Tourism Organization has predicted that the CO2 emissions from tourism will increase by 25% by 2030 [10].

To cope with the climate crisis, Xi Jinping, the President of China, proposed carbon peaking and carbon neutrality at the 28th Asia-Pacific Economic Cooperation (APEC) Economic Leaders' Meeting. China seeks to peak carbon dioxide emissions before 2030 and achieve carbon neutrality before 2060. Under the requirements of the "carbon peaking and carbon neutrality" goals (goal of 3060), tourism has begun a green transformation, including the hotel industry.

The tourism industry in China began low-carbon tourism in 2011 [11], which refers to a form of sustainable tourism development. Low-carbon tourism is guided by the concept of sustainable and low-carbon development; it adopts low-carbon technology, rationally utilizes resources, realizes energy conservation and emission reduction in the tourism industry, and maximizes the comprehensive benefits of society, ecology, and the economy [12–14].

The low-carbon development of tourism must emphasize the hotel sector's low-carbon practices [15–17]. There are three stages of low-carbon and sustainable development in hotels. Firstly, hotels, especially luxury hotels, emphasize using general low-carbon behaviors, such as waste sorting and energy saving, to reduce carbon emissions and achieve ecological benefits [18,19]. Secondly, some luxury hotels began making low-carbon investments in technological innovation and low-carbon talents [20,21], for example, utilizing new energy (such as solar energy) or designing green buildings to achieve social benefits [22,23]. Thirdly, stakeholders' concepts of hotel development fundamentally changed. Previously, shareholders, managers, operators, and tourists focused on a development concept centered on economic benefits; however, this focus has shifted to maximizing the comprehensive benefits of society, ecology, and economy in developing sustainable hospitality [24–27].

For internal stakeholders, Chan found that shareholders with high awareness of low-carbon behavior would invest more in low-carbon operations to improve environmental and social performance [24]. Furthermore, Qu et al. suggested that managers highly aware of low-carbon behavior would focus more on low-carbon management to prevent carbon emission and promote energy saving [28]. Moreover, employees with high awareness of low-carbon practices can reduce the operational costs and influence customers to become more eco-friendly [29,30].

For external stakeholders (hotel guests), Han and Yoon [31] claimed that low-carbon practices were the responsibility of both hotels and guests; that is, low-carbon and sustainable hospitality management practices require engagement between the hotels and the guests [24,32]. Steg and Vlek [33] defined guests' eco-friendly behaviors as pro-environmental behaviors (GPEB); guests tried to have as little impact on the environment as possible, and some even contributed to environmental health. GPEB means guests' willingness to protect the environment and adhere to green consumption [34–36]. Participation in GPEB can help hotels promote low-carbon development and achieve sustainable environmental and social benefits [37–39]. In addition, the green consumption behavior of guests also helps hotels realize new economic benefits [40–42].

Guests' support is an essential factor in sustainable development for hotels [43], where low-carbon development requires understanding and support from guests [44,45]. This involves a mutually beneficial symbiosis between the guests and hotels regarding supply and demand to achieve a stable balance [46,47]. Specifically, guests are compatible with the hotel and are inherently consistent with the hotel environment, which is termed the Recreationist-Environment Fit (R-E Fit). If the hotels want guests to become active participants in low-carbon activities, guests must satisfy the hotel's low-carbon service requirements while simultaneously having their needs met [48]. Additionally, hotels' low-carbon practices are promoted through hotel managers and guests sharing similar values [35,49]. Additionally, the hotel guests' knowledge and skills must also be consistent with the hotel's low-carbon concept [38,50]. In this way, guests can understand and cooperate when the hotel advocates for low-carbon and implements low-carbon practices [51,52]. However, the extant R-E Fit research mainly discusses the relationship between tourists and tourism destinations, and the studies on R-E Fit and GPEB focus on place attachment; few studies examine R-E Fit in hotels' low-carbon practices.

Sustainable competitiveness is one of the main goals hotels pursue [51,53]. For green hotels, in addition to maintaining low-carbon innovative development, attracting and retaining more customers are primary considerations for development [54]. Thus, many scholars like to study satisfaction and revisit intentions in hospitality management research [55–57]. However, most research only investigates hotel low-carbon management or GPEB [31,35,58,59]. Few studies have combined R-E Fit and GPEB to explore the impact on satisfaction and revisit intention. As such, this study examines R-E Fit in the hotel sector and tests if guests' R-E Fit can promote satisfaction and revisit intention in luxury hotels. This study also tests the moderating effect of GPEB on the relationship between guests' satisfaction and revisit intention.

In response to the sustainable low-carbon transformation, the National Green Hotel Working Committee of China and the China Hotel Association proposed "green restaurants, rest assured consumption" and announced the first batch of 100 model hotels in 2020. Among these 100 model hotels, seven luxury hotels in Sanya, Hainan were selected. This paper took these seven luxury hotels as the research background and used previous guests as respondents to study the relationship between R-E Fit and GPEB on guests' satisfaction and revisit intention.

2. Literature Review and Hypothesis Development

2.1. Green Luxury Hotel

Being a low-carbon producer is a new approach to sustainable economic development [60], and low-carbon has become a new focus in green hospitality management research [61,62]. Hotel carbon emissions, representing large contributions to climate change, have attracted significant attention from society. Therefore, low-carbon research for hotels has become a new focus in hospitality management [12].

The concepts of 'green' and 'low carbon' are different. 'Green' hospitality management focuses on hotels' environmental protection and green resource human management [63]. As part of the green ideology, 'low carbon' focuses on carbon emission reductions [64]. Since the beginning of low-carbon transformation, green hotels have implemented low-carbon behaviors, such as low-carbon technology, low-carbon talent, low-carbon culture, and green marketing [48,65,66]. Fraj et al. [67] concluded that proactive environmental strategies and environmental innovations would assist in developing greener hotel operations and management. As global warming is recognized as one of the most significant global risks, hospitality management must focus on sustainable low-carbon behaviors [68,69].

Luxury hotels have a high potential to engage in high energy consumption and carbon emissions. Yi [70] studied the carbon emission of hotels from the perspective of carbon footprints. He pointed out that the higher the level of the hotels, the greater the carbon footprint. Zhang [71] found that a medium-sized four-star hotel emits at least 4200 tons of carbon dioxide every year. As a result, luxury hotels should be primarily responsible for implementing low-carbon activities [68]; thus, many luxury hotel chains have implemented low-carbon measures in many countries. For example, Malaysia achieved a 33% carbon emission intensity to GDP reduction in 2019, relative to 2005 levels, and is well on its way to its target of cutting 45% of emissions by 2030. Overall, however, significant efforts are still needed to reduce the country's carbon footprint and mitigate global warming. Therefore, leading luxury hotels in Malaysia have begun implementing carbon emissions reduction measures. For instance, in a new partnership with Proof & Company, Four Seasons Malaysia implemented an ecoSPIRITS system at Bar Trigona at the Four Seasons Hotel, Kuala Lumpur and the Rhu Bar at Four Seasons Resort, Langkawi [72]. EcoSPIRITS is an innovative technology that significantly reduces packaging waste across the premium spirits supply chain. By drastically reducing the packaging and transport costs, ecoSPIRITS eliminates up to 80% of the spirit consumption carbon footprint. In 2020, 40 billion glass spirit bottles were produced, generating 22 million tons of carbon emissions; therefore, one bottle emits 550 g as carbon emissions, meaning that each cocktail or spirit poured through the ecoSPIRITS system can reduce emissions by 30 g.

In China, the development of low-carbon hotels is still in the initial stage. Since China's promised goal of 3060, many luxury hotels under green ranking have strengthened low-carbon management. For example, the Shangri-La hotel in Sanya promoted green design, and its green building received a silver award from LEED Green Building in the United States [73]. For another example, the Hainan Guest Hotel promoted low-carbon facilities and recyclable decorations to promote its low-carbon transformation. Moreover, it started green marketing in 2017 and realized four million RMB sales income [74]. This indicates that the low-carbon behavior of green luxury hotels can achieve both environmental and business performance.

As mentioned, the National Green Hotel Working Committee of China and the China Hotel Association proposed the first batch of 100 model hotels with "green restaurants, rest assured consumption". This study chose seven luxury hotels from these 100 model hotels to examine if the low-carbon service of green luxury hotels can promote business performance and green image.

2.2. Recreationist-Environment Fit

People interact with the tourist environment [75]. Specifically, individuals affect and are affected by environments through tourism [76,77]. Therefore, there is an interactive relationship between tourists and the environment [78]. The effect of these two ideas is a relationship that scholars refer to as R-E Fit theory [79,80].

Scholars first started to study the Person-Environment fit (P-E fit) theory in living and work environments before R-E Fit [81,82]. Kristof [83] introduced person-organization fit as "the compatibility between people and organizations that occurs when: (a) at least one entity provides what the other needs or (b) they share similar fundamental characteristics, or (c) both." The study introduced supplementary fit and complementary fit. Supplementary fit emphasizes the consistency between people and the environment. i.e., individuals and other members of the work environment have similar characteristics, and members attract and trust each other, leading to better communication [84]. Complementary fit is the degree of adaptation between individuals and living/work environments, emphasizing the degree of complementarity between them, which is essentially the fit between members and environments [85]. Later, Edwards [86] proposed a needs-supplies fit, which meant that the environment's value could meet individual needs, and the requirements-abilities fit, which advocates that people's skills, knowledge, and other resources could meet the requirements of the environment. P-E fit theory has been widely used in the fields of resource management and organizational behavior, such as person-job fit, person-group fit, and person-organization fit [87–89]. Later, Tsaur et al. [90] attempted to use P-E fit theory on the tourism environment; he also proposed R-E Fit and developed the correspondent R-E Fit Scale (REFS). Six dimensions were identified in this scale: natural resources, recreation functions, interpersonal opportunists, facilities, activity knowledge/skills, and operation/management. Since then, R-E Fit theory has been widely related to tourists' experiences and destination environments [80,91].

Scholars want to use R-E Fit theory in tourism to analyze the relationship between tourists' behaviors and destination environments [92]. According to past studies, there are three types of R-E Fit: needs-supplies, requirements-abilities, and complementary fit [93]. Needs-supplies fit means that the needs of tourists match the environment's supplies, such as natural resources, environmental facilities, environmental functions, and interpersonal opportunities; if their needs are met, then the tourists would be more willing to participate in low-carbon activities and may have high satisfaction [36]. When the tourists' knowledge and abilities meet the environment's requirements, it can also increase revisit intention [94], a process referred to as the requirements-abilities fit. Complementary fit refers to the relationship between tourists and the environment or the environmental managers [95]. In other words, tourists and managers have similar values regarding the maintenance facilities and management [96,97].

Hospitality is an integral part of tourism. As mentioned, the goals of carbon peaking and carbon neutrality prompted the tourism and hotel sectors to begin low-carbon transformation. Under this circumstance, hotels, especially luxury hotels, have started low-carbon hospitality management [19,48,63]. In the early stages, hotels developed low-carbon management through energy saving and renewable energy. For example, Dalton et al. [22] proposed that hotels make reasonable use of conventional energy, adopt energy-saving technology, and improve energy efficiency. They investigated guests' attitudes toward using renewable energy in Australian tourist resort hotels, and more than 50% of guests held positive attitudes toward pleasant accommodation environments and renewable energy. In the middle stage, hotels improved their facilities and innovated green buildings to realize

low-carbon operations. For instance, Hoshinoya hotel in Japan installed a semi-closed window on the roof to become a "wind house" without an air conditioner [98]. Furthermore, the "ceiling" installed at the GAIA hotel in the United States can fully use solar energy and reduce carbon emissions by two thirds. This hotel is the most eco-friendly hotel globally [99]. In the later stage, low-carbon management was combined with green training, low-carbon investment, and green marketing. Employees acted as "windows" of low carbon to promote the hotel's low-carbon culture. Cop et al. [48] mentioned that luxury hotels needed to strengthen employees' low-carbon training to satisfy guests' low-carbon needs. Moreover, Dogru et al. [100] found that the shareholders' low-carbon investment could improve low-carbon technology and the development of low-carbon talent, and Chung [40] found that many luxury hotels carried out green marketing. The study mentioned that hotels knew that growing environmental issues could change consumers' buying preferences. In that case, hotels must provide low-carbon products to attract guests to make green consumption choices. To illustrate, Sheraton provides green rooms, W Hotel recycled Coca-Cola bottle caps to make bedsheets to promote the green movement, and Vienna Hotel provides cotton and linen bedding for sale to guests.

The low-carbon behavior of hotels can bring about carbon efficiency and fit consumers' needs. In recent years, more hotels have adopted eco-friendly practices and implemented innovative technologies to reduce their carbon footprint and create a viable green image [24,101]. Guests have paid attention to the importance of changing lifestyles and engaging in eco-friendly behaviors [102]. Many hotel guests value hotels that offer up-to-date technology and demonstrate sustainability efforts through various sustainable programs [103]. Additionally, guests are more willing to join in the low-carbon activities and spread positive experiences via word of mouth [50,104]. In that case, low-carbon lodging experiences can fit their eco-friendly needs [35]. Overall, hotels' low-carbon practices are in accordance with the R-E Fit; however, most R-E Fit studies in tourism management relate to place attachment [79,105], and there are few in hospitality management. Thus, this study examines the R-E Fit in the hospitality sector. Furthermore, according to Tsaur et al. [79,90], regarding the six dimensions of R-E Fit, this study presents facilities, environmental resources, environmental functions, interpersonal opportunities, activity knowledge/skills, and management as the R-E Fit of the hotel industry (see the Appendix A).

2.3. Guests' Satisfaction

Various studies have found that improved guest satisfaction ultimately leads to greater customer loyalty and word-of-mouth recommendations [106,107]. Increasing competition in product marketing has forced companies to implement different strategies to attract and retain guests [27]. Among the different strategies that companies have used is the personalization of products to meet customer needs [108]. Guests' satisfaction is "a person's feelings of pleasure or disappointment that results from comparing a product's perceived performance or outcome with his/her expectations" [109]. A study by Lee et al. [110] indicated that hospitals could improve customer satisfaction and loyalty through efficient operations, employee engagement, and service quality. They also found that this high-performance work system in healthcare organizations stimulated employee reaction and service quality. Therefore, a customer may continue to increase the scope and frequency of their relationship with the service provider or recommend the service provider to other potential customers. Lee [111] suggests that guest satisfaction is linked to loyalty, which, in turn, is linked to the performance of service organizations. In short, a satisfied guest is more likely to return, and a returning customer is more likely to purchase additional items. A customer purchasing additional items with which they are satisfied is more likely to develop brand-loyalty [112–114].

In the hospitality industry, luxury hotels characterize excellent service, symbolizing the wealth and status of its patrons. Recently, many luxury hotels aiming to enhance market competitiveness have been exploring their characteristics, such as green building design, landscape design, and service quality [45]. The development of low carbon provides a

new marketing perspective for green hotels. Many studies have proven that low-carbon promotion could improve both direct financial performance (income, operational cost saving, new business) and non-financial performance (guests' satisfaction and loyalty, turnover rate, green image) [115–117].

Specifically, Williams [118] mentioned four key components for green hotels: eco-service, eco-accommodation, eco-cuisine, and eco-programming. Aksu et al. [119] explored the components of eco-service quality at hotels and found that the critical determinants for sensitive customers' satisfaction were equipment, staff and food, and practice. Hou and Wu [45] investigated tourists' perceptions of green building design and their intention of staying in a green hotel and found two primary contributors. Firstly, (a) green building design could save operational cost, and high environmental concern from tourists could influence the perceived importance of green building design and their intention of staying in hotels, and secondly, (b) the relationship between tourists' environmental concerns and intention of staying could help the development of green marketing activities. Yusof et al. [39] also confirmed that green and non-green status hoteliers should develop green practices because they significantly affect guests' satisfaction.

With the development of eco-cites in China, hotels started considering the topic of eco-hotels. In addition to traditional low-carbon behaviors, such as refusing disposable items and reusing towels, hotels can pay more attention to advanced behaviors to promote low-carbon services and tourist participation [120,121]. For example, such hotels set up low-carbon publicity walls, present environmentally friendly gifts, provide organic food, and carry out low-carbon activities [122]. These measures can share the hotels' low-carbon concepts and stimulate the guests' low-carbon resonance [50,51,123]. This could enable a hotel to promote unique characteristics and attract more guests [124,125].

Therefore, it is hypothesized that:

Hypothesis 1 (H1). *R-E Fit has a positive effect on guests' satisfaction.*

2.4. Revisit Intention

The existing service sector literature has extensively studied the relationship between satisfaction and guests' intentions to revisit in the past few decades. Fornell [126] suggested that the more the customers were satisfied with the services, the greater their willingness to revisit. At the tourism level, various studies have recognized the importance of satisfaction in predicting tourists' intention to revisit and attempted to investigate the relationship in the context of destination, for example, Mannan et al. [56] argued that customer satisfaction positively influenced revisit intention, and trust mediated the satisfaction–revisit intention relation in restaurants. Seetanah et al. [57] had the same conclusion of satisfaction and revisit intention in airport services. According to past empirical destination research, tourists choose destinations with attributes that they believe can meet their needs [127].

In the context of tourism, service quality, satisfaction, involvement, previous experience, place attachment, and perceived value can influence guests' intentions to revisit [128–130]. Of these, satisfaction is one of the most important determinants, which is widely understood in tourism experiences [56,131]. Several studies have proven that the more the guests express their satisfaction with destinations, the more likely they will be to revisit [132,133]. Tourists' intention to revisit refers to the possibility they plan to return to the same destination, which is a specific factor of good post-consumer behavior and a key component of tourist loyalty [49].

A satisfied hotel guest is not equal to a loyal guest due to the special characteristics of the hotel industry [134]; in other words, unless they have an irreplaceable positive impression of this destination, a guest could feel satisfied with the hotel's services, but not necessarily revisit the same hotel. In that case, it is easy to satisfy a customer but difficult, in the hospitality industry, to obtain a loyal customer [135]. Low-carbon operation is a potential selling point for the hotel sector and has become a new character factor among green hotels [13]. Low-carbon service in hotels has helped the development of the green image [136]. The general feelings of resource use, environmental functions, and facilities

help build overall impressions, becoming different dynamic and irreplaceable green images among guests [137]. An irreplaceable green image means meeting more consumers' needs, which leads to more satisfaction and a stronger willingness to revisit [66,134].

Therefore, it is hypothesized that:

Hypothesis 2 (H2). *Guests' satisfaction positively affects their revisit intention.*

2.5. Guests' Pro-Environmental Behavior

Pro-environmental behavior (PEB) refers to an individual's daily behavior that positively affects the environment and is directly related to the environment [138]. There is a variety of PEB which Moeller et al. [139] called the environmental responsibility behavior of ecotourists. Levinson [140] and Wynes and Nicholas [141] explained that PEB changed consumption patterns to relatively low-impact alternatives in individuals' consumption dimensions. In the tourism and hotel dimension, guests' pro-environmental behaviors (GPEB) are defined as changing their behaviors to do the least harm to the environment [38,142]. For example, Orsato [143] explained that GPEB was choosing eco-friendly transportation, rejecting the disposing of goods, or joining in low-carbon and green travels. Furthermore, Namkung and Jang [144] presented three dimensions of GPEB: guests' willingness to protect the destination environment, awareness of reducing pollution, and intention to participate in low-carbon consumption. In this study, GEPB refers to eco-friendly and green consumption behaviors in hotels and guests' daily lives.

GPEB is a basis for strategic management decisions, particularly in hotels [67]. On the one hand, GPEB is a low-carbon consumption behavior [31,36] where guests appreciate the low-carbon service [145]. Moreover, they are willing to buy low-carbon products and participate in low-carbon activities [146]. On the other hand, Han and Hyun [44] pointed out that GPEB is a low-carbon requirement for hotel service. Dani et al. [2], Han and Hwang [46], and Almomani et al. [66] showed that if a hotel improved its low-carbon service, it could increase tourist satisfaction and loyalty.

That means that as a form of low-carbon behavior commercialization, hotels' low-carbon services impact GPEB. The design of low-carbon services also considers the requirements of GPEB [45,147]. The successful low-carbon management solves the carbon emission issue and satisfies the guest for the service rendered or understanding of the hotel culture [148]. In that case, low-carbon hotels can make long-term profitability. Accordingly, the manager needs to focus on GPEB [16,24]; hotels must know about guests' GPEB demands so that they can provide suitable service and achieve tourist satisfaction and loyalty [43,104,149]. Thus, the study of GPEB needs to be associated with low-carbon service and business performance. Its primary purpose is to help hotels improve their service quality and then realize business performance (customer satisfaction and revisit intention) [124,150].

Trang et al. [38] and Yadav et al. [42] showed that GPEB had connections with guests' satisfaction and revisit intention in the hospitality sector. Additionally, Scheibehenne et al. [151] pointed out that social norms could enhance GPEB. They found that GPEB influenced hotel services, which was reciprocal as hotel services also affected GPEB through the reuse of hotel towels. Moreover, Tsagarakis et al. [152] interviewed 2308 international airport guests in Crete and Greece, and found that most of them would like to visit and revisit low-carbon hotels, and their GPEB could positively impact customer satisfaction. Furthermore, scholars have researched GPEB and hotels' room prices. For instance, Sánchez et al. [27] found that although environmental protection measures increased the operation costs and room prices, some guests with eco-friendly values were willing to pay higher prices. Additionally, they found that guests were willing to revisit lodging that provided low-carbon services. In that case, GPEB has a positive effect on satisfaction and revisit rate. Therefore, the following hypothesis is proposed:

Hypothesis 3 (H3). *GPEB positively moderates the relationship between guests' satisfaction and revisit intention.*

Figure 1 shows the model suggested by the hypothesized relationships between the constructs that was examined in the study. The first route is concerned with the relationships among the R-E Fit, guests' satisfaction, and guests' revisit intention constructs. Understanding the importance of GPTB in low-carbon hospitality management, the second route focuses on the moderating effect of GPEB on the relationship between guests' satisfaction and revisit intention.

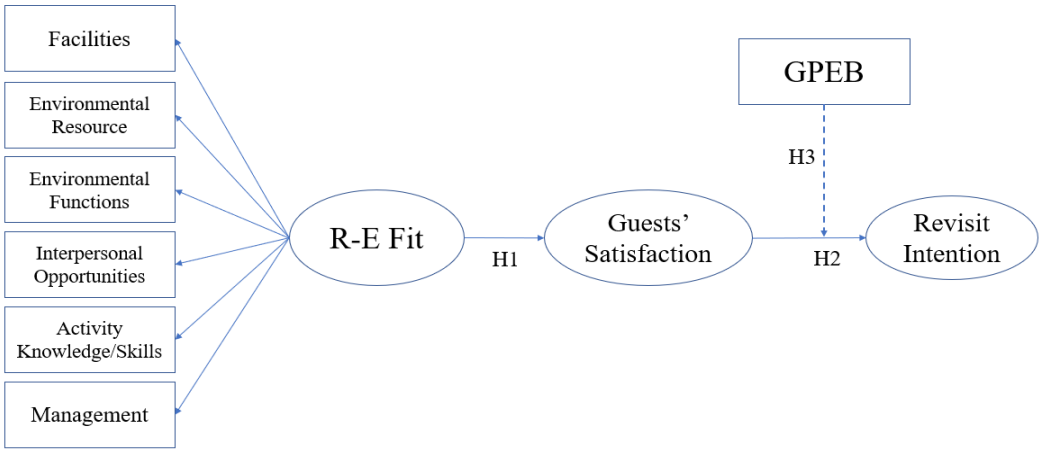

Figure 1. Conceptual model. Note: R-E Fit Recreationist-Environmental Fit, GPEB guests' pro-environmental behavior.

3. Methodology

3.1. Research Setting

This study's respondents were guests who had accommodation experiences in seven green luxury hotels in Sanya, Hainan. The properties were selected based on the National Green Hotel Working Committee of China and the China Hotel Association proposal for the first batch of 100 model hotels, following "green restaurants, rest assured consumption". Each selected hotel provided low-carbon service for its guests.

3.2. Sampling

Since 2009, The State Council of China provided the "Opinions of The State Council on Accelerating the Development of Tourism" to start low-carbon tourism and goals for five-star hotels to reduce water and electricity consumption by 20% in five years. In the past ten years, luxury hotels (four and five-star hotels) began low-carbon management [153,154]. Under the goal of 3060, China encouraged luxury hotels to join in significant low-carbon transformation. However, previous studies were not specific about the types of luxury hotels (green and non-green hotels or four and five-star hotels). This study focuses on the relationship of low-carbon service, guests' satisfaction, and revisit intentions for the seven model hotels, which provide more practical significance.

Data collection had two stages, the first of which was the pre-test. With the cooperation of hotel managers, we used face-to-face interviews and surveyed 57 guests who had accommodation experience in early June of 2021. After proving the questionnaire's reliability and internal validity, the second stage collected 339 questionnaires from August to October of 2021. After excluding inappropriate responses, this study generated a total of 245 usable questionnaires, which were used to test the hypothesized relationships and evaluate the adequacy of the proposed theoretical framework.

Most respondents were females (54.69%), and the main age group was 19–39 (68.98%). A large proportion of the participants (53.88%) were married, while 46.12% were single. Most survey respondents were highly educated, with college and graduate degrees (88.98%).

Additionally, 35.92% of respondents had RMB 5001–8000 (USD 785–1257) monthly income, and 20.41% had more than RMB 8001 (USD 1258). Moreover, 79.59% of participants visited hotels with their families and friends, while 15.92% visited alone. Regarding visit times, most respondents had visited the luxury hotel once (77.96%) and 19.18% had visited twice (Table 1).

Table 1. Descriptive summary of respondents (N = 245).

Category	Number	Percentage (%)
Gender		
Male	111	45.31
Female	234	54.69
Age		
Below 18	10	4.08
19–29	89	36.33
30–39	80	32.65
40–49	40	16.33
50–59	19	7.76
Above 60	7	2.85
Marital status		
Unmarried	113	46.12
Married	132	53.88
Education		
middle school or lower	10	4.08
High school	17	6.94
College degree	147	60.00
Graduate degree	71	28.98
Per capita monthly income		
Below 3000	16	6.53
3001–5000	91	37.14
5001–8000	88	35.92
Above 8001	50	20.41
Travel Companion		
Alone	39	15.92
Families	96	39.18
Friends	99	40.41
Travel clubs	11	4.49
Visit times		
One	191	77.96
Two	47	19.18
More than three	7	2.86

3.3. Measures

The questionnaire asked respondents about their R-E Fit, satisfaction, intentions to revisit, and GPEB. The 17-item REFS, developed from Tsaur et al. [79] and Zou et al. [80], reflected guests' low-carbon accommodation experiences (facilities, environment resources, environment functions, interpersonal opportunities, activity knowledge/skills, and management). Guests' satisfaction was assessed using three items adapted from Yusof et al. [39] and Li et al. [78]; intention to revisit was measured by three items adapted from Li et al. [78] and Moise et al. [155]. GPEB was measured using 12 items adapted from Miao and Wei [35], Trang et al. [38], and Kim and Stepchenkova [58]. All 35 items were assessed on a 5-point Likert scale, from 1=strongly disagree to 5 = strongly agree. As the survey instruments were adapted from Western research, the questionnaire was translated using a back-translation procedure to ensure content validity. Firstly, a faculty member translated the English version into Chinese, which was then translated back into English by a different faculty

member. The content and wording were short, simple, and comprehensible to avoid ambiguities [156].

3.4. Data Analysis

This study utilized SPSS 24.0 and AMOS 23.0 for proposed model fitting and statistical analysis. First, confirmatory factor analysis (CFA) was used to determine the underlying constructs in the 35 items. This was followed by an assessment of the constructs' reliability and validity, after which the model's relationships were estimated using a structural equation modeling (SEM) approach. SEM was used because of its advantages in prediction, which was the prime concern here. It is a multivariate technique incorporating observed and unobserved variables, which is useful when data are unobserved (latent constructs), considered likely in this study [157]. Lastly, the hierarchical multiple regression (HMR) was used to test the moderator effect of GPEB on the relationship of guests' satisfaction and intentions to revisit. HMR is frequently cited and widely used in moderating effect tests, as Baron and Kenny [158] described.

4. Results

4.1. Measurement Model Assessment

This study proposed four variables in the model (Figure 1): R-E Fit, guests' satisfaction, GPEB, and intention to revisit. R-E Fit had six parts: facilities, environmental resources, environmental functions, interpersonal opportunities, activity knowledge/skills, management. The facilities comprise three indicators (F1, F2, F3), named "F factor". The environmental resources are composed of three indicators (ER1, ER2, ER3), named "ER factor". The environmental functions comprise two indicators (EF1, EF2) called "EF factor". Interpersonal opportunities are composed of three indicators (IO1, IO2, IO3), named "IO factor". Activity knowledge/skills are composed of three indicators (AC1, AC2, AC3), called "AC factor". Management is composed of three indicators (M1, M2, M3), named "M factor." The guests' satisfaction comprises three indicators (GS1, GS2, GS3), named "GS factor". The GPEB is composed of 12 indicators (GPEB1, GPEB2, GPEB3, GPEB4, GPEB5, GPEB6, GPEB7, GPEB8, GPEB9, GPEB10, GPEB11, GPEB12), which can be named "GPEB factor". Finally, the revisit intention is "RI factor", consisting of three indicators (RI1, RI2, RI3, RI4, and RI5).

According to factor analysis, the Cronbach α of six items in R-E Fit (F, ER, EF, IO, AS, and M) was 0.830, 0.733, 0.829, 0.810, 0.836, and 0.823, respectively, all greater than 0.7. Regarding the deleted alpha coefficient, the reliability coefficient did not increase significantly after deleting an item, meaning that the item should not be deleted. The CITCs of the analysis items were all greater than 0.4, indicating that they had a good correlation and reliability level. In summary, the reliability coefficient value of the research data was higher than 0.7, which comprehensively showed that the data reliability was high and could be used for further analysis (Table 2).

Furthermore, the reliability coefficients of the REFS, satisfaction scale, revisit intention scale, and GPEB scale were 0.917, 0.818, 0.845, and 0.941, respectively. They were all greater than 0.7, which showed good reliability of the research data. Regarding the deleted alpha coefficient, the reliability coefficient did not increase significantly after deleting an item, meaning that the item should not be deleted. Moreover, the CITCs of the analysis items were all greater than 0.4, indicating that the information concerning the research item can be effectively extracted (Table 3).

Table 2. Reliability test of R-E fit.

Item	CITC	Cronbach's α If Item Deleted	Cronbach's α
F1	0.669	0.785	
F2	0.695	0.758	0.830
F3	0.702	0.751	
ER1	0.578	-	0.733
ER2	0.578	-	
EF1	0.683	0.768	
EF2	0.694	0.757	0.829
EF3	0.685	0.766	
IO1	0.629	0.771	
IO2	0.701	0.697	0.810
IO3	0.655	0.747	
AC1	0.696	0.775	
AC2	0.696	0.775	0.836
AC3	0.702	0.769	
M1	0.687	0.746	
M2	0.680	0.753	0.823
M3	0.665	0.768	

Note: F facilities, ER environmental resources, EF environmental functions, IO interpersonal opportunities, AC activity knowledge/skills, M management.

To complement the verification of this study's convergent validity, Table 4 shows that the standardized estimate of all factors was 0.6 and significant, indicating a good measurement relationship. We also calculated the average variance extracted (AVE) validity before concluding that all the latent variables attained the set criteria. Composite reliability (CR), which also represents an indicator of convergent validity, ensures the magnitude's evaluation by which the items in an instrument correlate with each other. This study performed CFA analysis for eight factors and 23 analysis items. The AVE values were greater than 0.5 and the CR values were greater than 0.7, indicating that the data in this analysis had good convergence validity [159] (Table 4).

Finally, to fulfill the discriminant validity, we compared the square roots of the AVE for each construct with the results returned by their respective correlations, as proposed by Fornell and Larcker [160]. The AVE square root index for each latent variable was higher than that of the other construct, indicating their respective mutual independence. Table 5 illustrates the correlations and quality criteria.

Table 3. Reliability test of factors.

Item	CITC	Cronbach's α If Item Deleted	Cronbach's α
F1	0.672	0.910	
F2	0.585	0.912	
F3	0.642	0.911	
ER1	0.514	0.914	
ER2	0.498	0.915	
EF1	0.620	0.911	
EF2	0.617	0.911	
EF3	0.637	0.911	
IO1	0.580	0.912	0.917
IO2	0.602	0.912	
IO3	0.587	0.912	
AC1	0.635	0.911	
AC2	0.585	0.912	
AC3	0.603	0.912	
M1	0.611	0.912	
M2	0.583	0.912	

Table 3. *Cont.*

Item	CITC	Cronbach's α If Item Deleted	Cronbach's α
M3	0.604	0.912	
GS1	0.655	0.765	
GS2	0.639	0.781	0.818
GS3	0.720	0.697	
RI1	0.710	0.784	
RI2	0.687	0.806	0.845
RI3	0.736	0.759	
GPEB1	0.728	0.936	
GPEB2	0.699	0.937	
GPEB3	0.713	0.937	
GPEB4	0.713	0.937	
GPEB5	0.739	0.936	
GPEB6	0.711	0.937	0.941
GPEB7	0.772	0.934	
GPEB8	0.726	0.936	
GPEB9	0.751	0.935	
GPEB10	0.752	0.935	
GPEB11	0.754	0.935	
GPEB12	0.716	0.936	

Note: F facilities, ER environmental resources, EF environmental functions, IO interpersonal opportunities, AC activity knowledge/skills, M management, GS guests' satisfaction, RI revisit intention, GPTB guests' pro-environmental behaviors.

Table 4. Validity test of factors.

	AVE	C.R.
F	0.619	0.830
ER	0.578	0.732
EF	0.619	0.829
IO	0.595	0.814
AC	0.630	0.836
M	0.608	0.823
GS	0.605	0.821
RI	0.646	0.845

Note: F facilities, ER environmental resources, EF environmental functions, IO interpersonal opportunities, AC activity knowledge/skills, M management, GS guests' satisfaction, RI revisit intention.

Table 5. Validity test of factors (square roots of AVE).

Constructs	F	ER	EF	IO	AC	M	GS	RI
F	**0.787**							
ER	0.417	**0.760**						
EF	0.520	0.573	**0.787**					
IO	0.571	0.341	0.485	**0.772**				
AC	0.530	0.377	0.488	0.479	**0.794**			
M	0.506	0.376	0.493	0.507	0.516	**0.780**		
GS	0.271	0.398	0.334	0.357	0.271	0.351	**0.778**	
RI	0.338	0.353	0.348	0.342	0.382	0.350	0.356	**0.803**

Note: F facilities, ER environmental resources, EF environmental functions, IO interpersonal opportunities, AC activity knowledge/skills, M management, GS guests' satisfaction, RI revisit intention.

4.2. Model Fit Assessment

SEM can define observed variables data in the hypothesized model. Various factors, such as sample size, model intricacy, normality of distribution, and parameter approximation method, affect every fit index in diverse ways [161]. During this phase, the researcher should assess and interpret results exclusively on the figures from analysis rather than remarking based on the theory and concept, thus forming the study's structure and findings.

From Table 6, all fit indices presented met the threshold value. In this case, the x2/df met the threshold of less than 3.00 (1.061). Including the other fit induced criteria, such as the goodness of fit index (GFI: 0.934), comparative fit index (CFI: 0.995), normed fit index (NFI: 0.926), and non-normed fit index (NNFI: 0.995), shows that the hypothesized model has a good fit to the data. Meanwhile, RMSEA shows that the value for the overall model (0.016) was below the cut-off point of 0.10, thus indicating an excellent fit [161,162].

Table 6. Fit Indices of Overall Measurement Model.

Measures	Measurement Model	Threshold Values
x2	214.392	
df	202	
p-value	0.262	0.05 and above
x2/df	1.061	Less than 3
GFI	0.934	0.900 and above
CFI	0.995	0.900 and above
NFI	0.926	0.900 and above
NNFI	0.995	0.900 and above
RMSEA	0.016	Less than 0.100

4.3. Hypotheses Testing Results

SEM path analysis was undertaken to test first two hypotheses. The standardized estimate, critical ratio, and *p*-value were referred to in accepting or rejecting all hypotheses outlined in this study.

To effectively verify the validity of the hypothesis, the internal fit of the model can be divided into two parts: the internal consistency of each sub-indicator and its corresponding dimension in the questionnaire; and the internal consistency between dimensions.

The first part observes the internal consistency between each sub-indicator and dimension in the questionnaire, as Table 7 illustrates. The results showed the measurement relationship between the factor and the scale question. The first item of the measurement relationship was the control item, so the critical ratio (C.R.) value or *p*-value was not output. The ideal C.R. is greater than 1.0, implying that the model does well as a sub-indicator and its dimension, while ratios below 1.0 imply poor performance. According to the table, other observation items of the sub-indicator and its dimension had extremely high ratios, *p*-values were highly significant ($p = 0.000$), and the standardized factor loading (SFL) of each sub-indicator was greater than 0.7. Therefore, the measurement relationship between the observation items and the factor was good.

Table 7. Internal consistency between sub-indicator and dimensions.

X→Y	SE	C.R.	*p*	SFL
R-E Fit→F	0.130	8.331	***	0.808
R-E Fit→ER	0.121	6.995	***	0.709
R-E Fit→EF	0.129	8.267	***	0.806
R-E Fit→IO	0.131	7.956	***	0.753
R-E Fit→AC	0.114	7.860	***	0.771
R-E Fit→M				0.771
F→F1	0.083	12.398	***	0.797
F→F2	0.079	11.897	***	0.764
F→F3				0.798

Table 7. *Cont.*

X→Y	SE	C.R.	*p*	SFL
ER→ER1	0.123	8.422	***	0.772
ER→ER2				0.749
EF→EF1	0.080	12.010	***	0.780
EF→EF2	0.086	12.168	***	0.791
EF→EF3				0.789
IO→IO1	0.096	10.721	***	0.733
IO→IO2	0.104	11.621	***	0.812
IO→IO3				0.762
AC→AC1	0.080	12.434	***	0.808
AC→AC2	0.080	12.060	***	0.780
AC→AC3				0.793
M→M1	0.088	11.741	***	0.797
M→M2	0.088	11.432	***	0.771
M→M3				0.771
GS→GS1				0.766
GS→GS2	0.096	10.621	***	0.737
GS→GS3	0.101	11.284	***	0.812
RI→RI1				0.809
RI→RI2	0.078	11.889	***	0.764
RI→RI3	0.081	12.546	***	0.835

Note: F facilities, ER environmental resources, EF environmental functions, IO interpersonal opportunities, AC activity knowledge/skills, M management, GS guests' satisfaction, RI revisit intention; *** $p < 0.01$.

Once the internal consistency between the sub-indicator and dimensions was confirmed, this research verified the hypotheses in the theoretical and structural model study. Table 8 shows the verification results of H1 and H2.

Table 8. Summary of Result for H1 and H2.

Hypothesis	X→Y	SE	C.R.	Path Coefficients	Results	*p*
1	R-E Fit→GS	0.109	6.166	0.539	Supported	***
2	GS→RI	1.088	5.928	0.465	Supported	***

Note: GS guests' satisfaction, RI revisit intention; *** $p < 0.01$.

H1 tested the relationship of R-E Fit to determine if it positively affected GS. The result found that when R-E Fit affected GS, the standardized path coefficient value was 0.539 > 0, which showed a significant level of 0.01 (C.R. = 6.166, $p = 0.000 < 0.01$), indicating that R-E Fit had a significant positive impact on GS. Therefore, H1 was supported.

H2 suggested that the GS relationship has a positive effect on RI. It was discovered that when GS affected IP, this path showed significance (C.R. = 5.928, $p = 0.000 < 0.01$), demonstrating that GS affected RI. Hence, H2 was supported.

In summary, the model (Figure 2) showed a good fit, and all the hypothesized paths were verified. Based on the results verification mentioned above, the model's overall fit represented the data adequately.

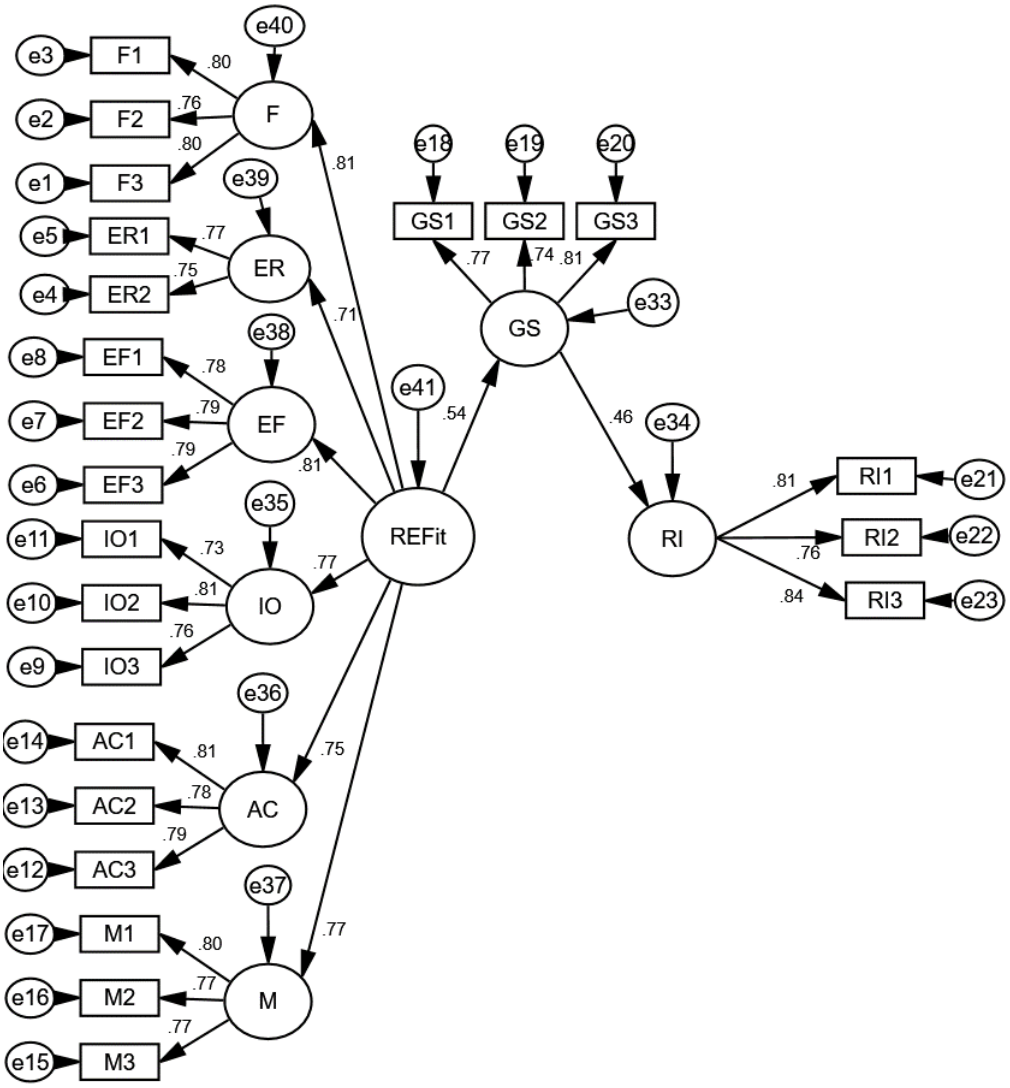

Figure 2. Standardized Estimates for Hypothesized SEM Models (Appendix A).

4.4. Moderating Effect Testing by Hierarchical Multiple Regression

HMR was used to test the proposed hypotheses because it can evaluate complete theoretical models (e.g., path models or factor analytic models), account for sampling covariance between effect sizes, and provide the proposed model sample data's overall fit. This analysis was most appropriate for the current study, as it allows for the assessment of whether the relationship between two variables fluctuates according to some third variable [163].

According to HMR procedures, the three models dealt with the moderating effect of GPEB on GS and RI. To test Model 1, we entered the GS as the independent variable, followed by RI as the dependent variable. Model 2 added the GPEB as a moderator variable based on Model 1; Model 3 added an interaction term (the product term of GS and GPEB) based on Model 2. Table 9 presents the HMR results.

Table 9. The Results of HRM for Model 1–Model 3.

	Model 1				Model 2				Model 3			
	β	Std. Error	t	*p*	β	Std. Error	t	*p*	β	Std. Error	t	*p*
Constant	3.014	0.061	49.657	0.000 **	3.014	0.057	52.472	0.000 **	2.964	0.061	48.201	0.000 **
GS	0.364	0.061	5.936	0.000 **	0.192	0.066	2.894	0.004 **	0.166	0.067	2.482	0.014 *
GPEB					0.412	0.076	5.416	0.000 **	0.397	0.076	5.244	0.000 **
GS*GPEB									0.121	0.056	2.146	0.033 *
R2	0.127				0.221				0.236			
Adjusted R2	0.123				0.215				0.226			
F	35.235				34.337				24.768			
p	0.000				0.000				0.000			
Δ R2	0.127				0.094				0.015			
Δ F	35.235				29.332				4.606			
p	0.000				0.000				0.033			

Note: Dependent variable: RI; * $p < 0.05$ ** $p < 0.01$; $n = 245$; GS guests' satisfaction, GPEB guests' pro-environmental behaviors, RI revisit intention.

Model 1 studied the influence of the independent variable (GS) on the dependent variable (RI) without considering the interference of the moderating variable (GPEB). From the above table, we can see the independent variable (GB) was significant (t = 5.936, $p = 0.000 < 0.01$), indicating GS had a significant influence on RI.

The moderating effect can be viewed in two ways: firstly, by checking the significance of the change in F value from Model 2 to Model 3; secondly, by checking the significance of the interaction term in Model 3. We selected the second way to analyze the adjustment effect.

It can be seen from Table 9 that the interaction term between GS and GPEB was significant (t = 2.146, $p = 0.033 < 0.05$). This indicates that when GS affected RI, the moderating variable (GPEB) was at different levels; there was a significant difference in the impact's magnitude, which can be observed through the following simple slope plot in Figure 3, from the analysis in Table 10.

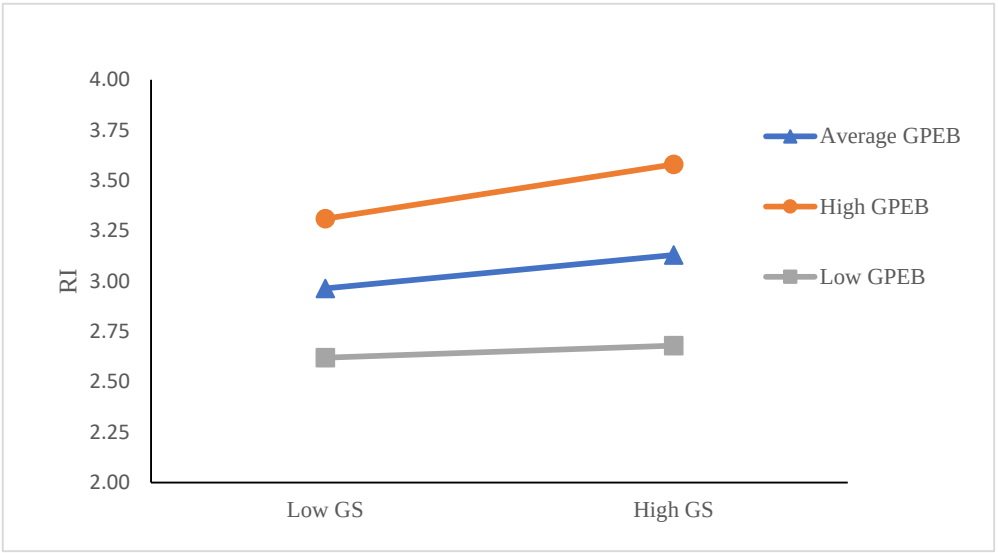

Figure 3. Simple Slope Plot of Model 1–Model 3.

Table 10. Simple Slope Analysis for Model 1–Model 3.

Moderate Variable Level	Regression Coefficients	Standard Error	t	*p*	95% CI
Average GPEB	0.166	0.067	2.482	0.014	0.035
High GPEB	0.270	0.075	3.591	0.000	0.123
Low GPEB	0.062	0.089	0.689	0.491	−0.114

5. Discussions

This study investigated the relationship of R-E Fit, guests' satisfaction, and guests' intentions to revisit, intending to verify the moderating effect of GPEB on the relationship between guests' satisfaction and revisit intention. The SEM results indicate that R-E Fit positively impacted guests' satisfaction. Furthermore, guests' satisfaction positively influenced their intentions to revisit.

The result of H1 proved that a low-carbon experience could help increase guests' satisfaction, which aligns with the findings of Li et al. [133]. In their study, two experiences, including fun learning and an acting experience, positively influenced ecotourism. Many green luxury hotels have adopted positive low-carbon behaviors to develop low-carbon services, such as low-carbon activity innovation, low-carbon education, and low-carbon consumption. Under this circumstance, guests can enjoy more low-carbon experiences than offered by a traditional luxury experience. In that case, they would more easily feel worthwhile and satisfied with the low-carbon service. Conversely, as mentioned, guests with green and low-carbon knowledge would require hotels' low-carbon services; the higher the service quality, the more satisfaction that guests had. This was similar to studies by Carrascosa-López et al. [164] and Gursoy and McCleary [165]; specifically, perceived destination value and perceived destination knowledge positively affected guests' satisfaction. In addition, the management concept closely relates to corporate image [166]. The hotel's low-carbon management value could help build a green image, and such an image could win customers' trust and promote a willingness to leave a positive comment or spread word-of-mouth.

H2 predicted that guests more satisfied with low-carbon services from luxury hotels would be more likely to revisit, which is in line with previous research [167,168]. According to the survey, most guests (77.96%) were first-time visitors at the hotels. According to previous studies, such as Ezebilo [169], building revisiting decisions depended on positive and satisfactory experiences during a first visit. In that case, leaving a memorable impression is essential, and hotel managers need to provide more featured experiences and activities to retain guests. In this study, R-E Fit related to a hotel's image. Yu et al. [167] and Chen and Tsai [170] mentioned that the destination image also had significant influences on post-trip assessment, such as satisfaction and future behavioral intentions (intentions to revisit and recommendation to others). This theory is similar to the results of H1 and H2, confirming that R-E Fit could increase guests' satisfaction; moreover, it could positively affect guests' revisit intention.

The results of HRM revealed that GPEB provided moderating effects on the relationship between guests' satisfaction and intention to revisit. Since low-carbon transformation started in China, people's environmental awareness has increased, supporting this study's GPEB findings. In the past, people believed staying in a hotel was for enjoyment rather than for protecting the environment [171]. From this perspective, hotels' low-carbon management was based on their social responsibility. However, this study found that guests adopted pro-environmental behaviors at home and outside; regardless of geography, they participated in low-carbon activities during their daily life (low-carbon lifestyle and low-carbon consumption). When they stayed in hotels, they preferred general behaviors, such as reusing linens, rejecting disposable supplies, and reducing waste. Furthermore, they were willing to engage in advanced behaviors, such as low-carbon education and low-carbon consumption [44,50].

In this research, high GPEB meant that guests supported low-carbon behaviors and cared about the low-carbon measures taken by hotels. Thus, hotels need to fit guests' needs by developing and innovating low-carbon services to increase guest satisfaction and attract returning visitors. Understanding that R-E Fit and guests' satisfaction are affected, under the moderating effect of GPEB, by their intent to revisit, can help hotels to achieve sustainable development.

5.1. Theoretical Implications

This study plays a vital role in contributing to the existing low-carbon hospitality management literature. The findings confirmed the new viewpoint of "R-E Fit—guests' satisfaction—GPEB—revisit intention" from the perspectives of both hotels (internal) and guests (external).

This research proved the positive effect of the R-E Fit theory on low-carbon management of luxury green hotels, filling the gap in low-carbon hospitality studies. According to R-E Fit, low-carbon services could be a new selling point in luxury hotels. Although hotels' main purpose is to invite guests to engage in leisure and enjoyment, new attractions are needed to sustain the current business, such as low-carbon service [29,51,172]. On the one hand, R-E Fit could help luxury hotels to improve their environmental and social performances; on the other hand, it can also help to develop business performance.

Furthermore, GPEB research provided a new direction for researching hotel business performance. Hotels' low-carbon services attracted guests to increase their satisfaction; meanwhile, guests with more pro-environmental awareness would be likely to revisit and easily satisfy hotels' low-carbon management, thereby improving their turnover rate. This study confirmed the moderating role of GPEB in guests' satisfaction and intentions to revisit. According to the findings, R-E Fit could positively influence guests' satisfaction, and guests with environmental awareness would have more willingness to return. High-quality service generates customer satisfaction, enhancing the competitiveness of the hotel. Furthermore, the PEB study also provides empirical support for the theoretical framework, as illustrated in Figure 1.

5.2. Practical Implications

In the beginning, green hotels implemented low-carbon management due to the government's call for low-carbon to control global warming. Under the low-carbon tourism transformation, general green hotels started low-carbon management in the past ten years, mainly focusing on general low-carbon behaviors, such as garbage classification, energy-saving, and low-carbon technique [19]. Although Li [173] and Han [174] mentioned some positive low-carbon behaviors, such as management behaviors, investment behaviors, and marketing behaviors, they lack features. It is difficult for a hotel without characteristics to attract loyal guests [175,176]. The sustainable development of green luxury hotels requires low-carbon innovation, which means innovating services, not technology.

Williams [118] presented four key components in green hospitality management: eco-service, eco-accommodation, eco-cuisine, and eco-programming. As such, green luxury hotels need to innovate their characteristic services, for instance through designing high-quality, low-carbon products (100% recycled note pads, biodegradable soap, cotton, and linen bedding), creating green restaurants (menus that incorporate local, seasonal, and organically grown food), or organizing green promotion activities. A hotel's featured services can impress guests, leading to more satisfaction and willingness to revisit. This study made an interesting discovery that new guests differ from previous guests. Since the beginning of the low-carbon transformation around China, people's pro-environmental awareness has been increasing. Suki [171] found that guests were knowingly concerned about eco-friendliness or acted in low-carbon ways if they were aware of environmental problems and potential threats; however, they preferred to engage in environmental practices at home rather than in hotels and workplaces. This study found that more and more people want to join in low-carbon activities in tourism. This new finding suggests

that managers should design characteristic low-carbon services to satisfy their customers and increase hotel value recognition. Satisfied guests are loyal guests, and they bring new guests. Thus, characteristic services can benefit hotels' performance development and a sustainable green image.

6. Conclusions

This study puts forth two new findings. The first is R-E Fit in hospitality management. R-E Fit reflected low-carbon service; high-quality, low-carbon service could meet and satisfy guests' needs. Additionally, R-E Fit is also related to a hotel's green image. Management values showed the hotel's green culture, which guests knew through low-carbon services and activities. Guests with similar values would have greater intent to return, thus aiding hotels to achieve sustainable financial performance.

The second finding concerns GPEB. In hotels, people have more pro-environmental behaviors, including general and advanced behaviors; they have high requirements for low-carbon services. In other words, general low-carbon behaviors which are no different from other hotels cannot attract guests. Hotels need to promote service innovation to build their unique characteristic services to attract new consumers and retain old consumers: the more distinctive the low-carbon service, the higher the customer satisfaction and the better the hotel's competitiveness.

The findings of this article enhance the theoretical implication of the relationship of low-carbon service and guests' pro-environmental awareness in hospitality management. On the one hand, as a new selling point, low-carbon service can positively influence guests' satisfaction and intention to revisit. On the other hand, guests with high pro-environmental awareness have high needs for low-carbon experiences in their lodging time. The more low-carbon services are provided by hotels, the higher the satisfaction and loyalty they will receive. Due to the importance of low-carbon service in low-carbon management, hotels should consider more measures to develop their low-carbon behaviors, which is the practical implication of this article. As mentioned, general behavior does not easily produce high satisfaction and loyalty. In this case, according to the results of this paper, designing characteristic low-carbon services is a new way to achieve high business performance in hotel management. Guests with high environmental awareness would like to join in low-carbon activities and they will require hotels to provide diverse low-carbon services; meanwhile, diversified hotels' low-carbon activities can also enhance guests' pro-environmental awareness and intentions to help to achieve the goal of 3060 in China.

Although this study's results are crucial in understanding the relationship of R-E Fit, guests' satisfaction, GPEB, and revisit intention, the researcher also encountered some limitations in completing this research.

The first issue regards satisfaction and the intention to revisit, which belong to business performance. However, there are many dimensions in business performance; one of the most important is competitiveness. In the comprehensive performance evaluation, competitiveness has become the key indicator and plays a vital role in considering the success of hotels [177]. R-E Fit is a new finding in low-carbon hospitality management; therefore, a study of R-E Fit and business performance cannot ignore competitiveness evaluation. Future studies can examine the relationship between R-E Fit and competitiveness concerning sustainable hospitality development.

Another limitation concerns GPEB. There are 12 GPEB items in this study. As mentioned, guests' eco-friendly behaviors have general and advanced behavioral dimensions. Future studies need to classify GPEB to test the moderating effect on satisfaction and intention to revisit on low-carbon management in the hotel sector. Furthermore, future research can also examine GPEB's moderating impact on competitiveness.

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Institutional Review Board Statement: All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of the Guangdong University of Petrochemical Technology (Ref. No. 702).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: All the data used in this study are public.

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Conflicts of Interest: The author declares no conflict of interest.

Appendix A. Measurement Instrument

Recreationist-Environment Fit (R-E Fit)

Facilities (F)

F1. The energy-saving facilities provided by this hotel meet my expectations.

F2. The maintenance behaviors of the energy-saving facilities in this hotel meet my expectations.

F3. The low-carbon services provided by this hotel meet my expectations.

Environmental Resource (ER)

ER1. The green landscape of this hotel fits my needs for living.

ER2. The environmental resources around this hotel are suitable for my travel activities.

Environmental Functions (EF)

EF1. This hotel helps me to release pressure.

EF2. This hotel provides me with a wonderful lodging experience.

EF3. This hotel fulfills my needs for leisure experience.

Interpersonal Opportunities (IO)

IO1. When staying at this hotel, I would like to share the experience of participating in the hotel's green activities with other participants.

IO2. When staying at this hotel, the hotel gives me the opportunity to meet with other participants.

IO3. When staying at this hotel, the hotel allows me and other participants to learn certain environmental activities.

Activity Knowledge/Skills (AC)

AC1. My skills fit the low-carbon advocacy of this hotel.

AC2. My knowledge fits the low-carbon advocacy of this hotel.

AC3. My post experiences fit the low-carbon advocacy of this hotel.

Management (M)

M1. I identify with this hotel's concepts regarding the lodging.

M2. I identify with the hotel's concepts regarding the management of low carbon.

M3. When experience this green hotel, I feel that I share similar values with the manager.

Guests' Satisfaction (GS)

GS1. I am satisfied with the service of this hotel.

GS2. I would love to leave a good review online.

GS3. I would like to recommend this hotel to my friends.

Revisit Intention (RI)

RI1. I plan to revisit this hotel.

RI2. The probability that I would consider revisiting this hotel is high.

RI3. If I would, I would like to continue visiting this hotel.

Guests' Pro-Environmental Behavior (GPEB)

GPEB1. I am willing to adopt a low-carbon lifestyle in my daily life.

GPEB2. I will refuse to buy products from enterprises with environmentally damaging behaviors.

GPEB3. I am willing to buy products with eco-friendly labels.

GPEB4. I am willing to travel to destinations with beautiful natural surroundings.

GPEB5. I am willing to learn about low carbon.

GPEB6. In the green hotel, I prefer to use my own toiletries rather than disposable supplies.

GPEB7. In the green hotel, I prefer to reuse linens such as bed sheets and towels.

GPEB8. In the green hotel, I prefer to reduce the amount of garbage.

GPEB9. In the green hotel, I am willing to join in low-carbon activities which are organized by the hotels.

GPEB10. In the green hotel, I am willing to learn low-carbon knowledge.

GPEB11. In green hotel, I am willing to purchase low-carbon products.

GPEB12. Even though the hotel pricing has risen by 10% because of the low-carbon service, I am still willing to stay.

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