



# Article **Promoting Green Buildings and Low-Carbon Design Strategies of Green B&B Rooms for Sustainable Tourism after COVID-19**

Gangwei Cai <sup>1,2,3,4,†</sup>, Min Zhang <sup>1,5,†</sup>, Xiandu Zhang <sup>6</sup>, Huijian Xi <sup>7</sup>, Zhong Chen <sup>8</sup>, Chao Liu <sup>9</sup>, Kang Liu <sup>2,10</sup>, Ke Liu <sup>11,12,\*</sup>, Shiwen Xu <sup>6,\*</sup> and Zuoping Yu <sup>13,\*</sup>

- <sup>1</sup> School of Civil Engineering and Architecture, Zhejiang University of Science and Technology, Hangzhou 310023, China
- <sup>2</sup> Baoye Group Company Limited, Shaoxing 312030, China
- <sup>3</sup> College of Architecture and Urban Planning, Tongji University, Shanghai 200092, China
- <sup>4</sup> Faculty of Environmental Engineering, University of Kitakyushu, Fukuoka 8080135, Japan
  - Linping District People's Government of Hangzhou, Hangzhou 311199, China
- <sup>6</sup> Zhejiang Province Institute of Architectural Design and Research, Hangzhou 310011, China
- <sup>7</sup> Zhejiang University of Technology Engineering Design Group Co., Ltd., Hangzhou 310014, China
- <sup>8</sup> POWERCHINA Huadong Engineering Corporation Limited (HDEC), Hangzhou 311122, China
- <sup>9</sup> College of Architecture and Urban Planning, Qingdao University of Technology, Qingdao 266033, China
- <sup>10</sup> Daiwa House (China) Investment Co., Ltd., Shaoxing 312030, China
- <sup>11</sup> The Design Institute of Landscape & Architecture China Academy of Art Co., Ltd., Hangzhou 310012, China
- <sup>12</sup> Zhejiang Institute of New Era Rural Studies, Hangzhou 310012, China
- <sup>13</sup> Hangzhou Linping District Construction Industry Management Service Center, Hangzhou 311199, China
- \* Correspondence: yb@caaladi.com (K.L.); xushiwen@ziad.cn (S.X.); 11212015@zju.edu.cn (Z.Y.)
- † These authors contributed equally to this work.

**Abstract:** COVID-19 opened a window of opportunity to change the green development of the hospitality industry. For many years, Chinese tourists have been the world's largest source of outbound tourists. Therefore, this study attempted to improve built-environment strategies for green rooms at B&Bs using the empirical statistics of Chinese tourists after the end of COVID-19 control measures and different green B&B standards, combining IPA (importance-performance analysis). For the lack of a green built-environment study from a tourism perspective, this study can be used mainly for improving the green satisfaction of urban B&Bs as it attempted to fill the gaps in research on green B&B rooms. This study will significantly help improve the quality of green rooms for the B&B industry in the future, and it also provides an improved green B&B room sample for other countries and regions. Moreover, it is an optimistic attempt at hospitality and tourism recovery.

**Keywords:** green B&B rooms; sustainable tourism; green building; low-carbon design; green indoor environment; importance-performance analysis (IPA); COVID-19

# 1. Introduction

COVID-19 opened a window of opportunity (e.g., the green/healthy physical environment of B&Bs may be the new target) to change the green development of the hospitality and tourism industry [1]. Product design (e.g., a green B&B room evaluation model and promotion strategies) is one of the four aspects of China's hospitality industry that was significantly and permanently affected by COVID-19 [2]. Therefore, we urgently need to research the green hotel industry: how to improve customer satisfaction during/after COVID-19, and how to encourage the hotel industry to better development in the future. Moreover, the changes in the hotel industry have exceeded our expectations, especially after the outbreak of COVID-19. Therefore, this study attempted to establish a new dynamic, green building evaluation of green B&B rooms using the descriptive statistics of Chinese tourists after the end of COVID-19 control measures and different green B&B standards, combining IPA (importance-performance analysis) (Figure 1).



Citation: Cai, G.; Zhang, M.; Zhang, X.; Xi, H.; Chen, Z.; Liu, C.; Liu, K.; Liu, K.; Xu, S.; Yu, Z. Promoting Green Buildings and Low-Carbon Design Strategies of Green B&B Rooms for Sustainable Tourism after COVID-19. *Land* **2023**, *12*, 633. https://doi.org/10.3390/land12030633

Academic Editors: María Jesús Montero-Parejo, Jacinto Garrido Velarde, Lorenzo García Moruno and Julio Hernández Blanco

Received: 1 February 2023 Revised: 1 March 2023 Accepted: 3 March 2023 Published: 7 March 2023



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Figure 1. The logical model.

On one hand, many previous studies were done on green B&Bs from the perspective of tourism or the built-environment perspective [3–5]. However, a cross-study with built-environment and tourism perspectives was lacking. Therefore, it is essential to study improving the green satisfaction of urban B&Bs and attempt to fill the gaps in research on green B&B rooms.

On the other hand, China has maintained its position as the world's largest source of outbound tourists for many years [6]. In 2018, the number of Chinese outbound tourists reached 150 million, an increase of 14.7% over the previous year [7]. Therefore, this study selected the data after the end of COVID-19 control measures in China as the survey's key focus. The Questionnaire Star (Changsha Ranxing Information Technology Co., Ltd., Changsha, China) was used to make questionnaires. We downloaded and summarized the data on the webpage of Questionnaire Star. The improved Expect-Importance Past-Performance Analysis (EIPPA), based on IPA, was used as the principal tool of questionnaire design and analysis. This study will significantly help improve the quality of the built environment of green rooms for the B&B industry in the future (especially for enhancing green satisfaction).

#### 2. Literature Review

# 2.1. New Opportunities for Green B&Bs after COVID-19

COVID-19 provided a new opportunity for tourism. After COVID-19, some green B&B strategies were studied, some hospitality socio-economic implications were studied [8,9], the healthy cities [10,11], and hospitality marketing and management were studied [12,13]. They found that COVID-19 will significantly and permanently affect China's multi-channel hotel industry in four significant aspects (multi-channels/business, market reshuffle, product design, and intelligent transformation). The purpose of a hotel is an accommodation that solves the problem of staying away from one's home. The significance of B&B is the accommodation experience based on the accommodation function, the tourism experience and enjoyment based on the proper solution of the accommodation problem, and the trans-

formation of the accommodation function into the tourism experience itself. Borrowing Maslow's hierarchy of needs theory, the accommodation function aims to solve the needs of survival and safety; a B&B aims to solve higher needs, such as enjoyment, respect, and self-realization. Therefore, the development idea of a B&B should be based on good accommodation functions in order to improve the accommodation experience. Moreover, the dual-carbon target is a two-stage goal of carbon emission reduction proposed by China, which means that China will achieve a "carbon peak" by 2030. The carbon emissions will not increase after reaching the peak, and China will realize "carbon neutrality" before 2060.

## 2.2. Green B&B in China

"Do B&Bs' 'green' attributes contribute to customer satisfaction?" The answer is yes. In the past, different experts have carried out research on many aspects of green B&Bs. Suki and Suki [14] studied the green B&B in light of consumers' environmental behavior. Moreover, some previous studies also focused on the sustainable and green B&B evaluation model [15,16]. However, few previous studies focused on green B&Bs and green room evaluation models for post-COVID-19. Therefore, a potential study opportunity was to focus on green B&B types after the COVID–19 crisis.

Starting in April 2020, all travelers returning to mainland China from abroad were quarantined in different hotels for 14 days. The tourist visa time for mainland Chinese tourists going abroad is generally 15 days. Short-term travelers can be those traveling or residing overseas for 3 weeks or less [17]. However, the previous studies on short-term travelers mainly focused on medical research [18,19]. After December 2022, most regions in China gradually ended strict control measures for COVID-19. The government began looking forward to the recovery of the economy, such as tourism. This provided an excellent opportunity for the research object of this study (green B&B building environment). Since then, more and more Chinese citizens have visited hotels and B&Bs in well-landscaped sites. For example, from the inception of the operational accommodation facilities data in Sanya on January 26, the average occupancy rate in the city was 86.39%, and the number of overnight tourists received was about 202,500. Among them, the number of overnight guests received by tourist hotels was about 95,300; the number of people who stayed overnight at B&Bs was about 12,300. Rural tourism spots received 233,700 tourists, up 5.06% month-on-month and 31.60% year-on-year.

#### 2.3. Green Customer Satisfaction and Hospitality Recovery

Green satisfaction is positive to customers' green consumption [20,21]. It also had positive impacts on green B&Bs in previous studies: satisfaction with green buildings' indoor environmental quality and perceived quality were studied [22,23]; service directly affecting people was studied [24]; customer satisfaction was studied as an essential aspect of customer service [25,26]; consumer sentiment, perceived value, and service quality were positive with satisfaction [27]; and tourists' determination to revisit the attractions were studied [28,29]. Akinci et al. [30] and Hall et al. [31] studied destination decision-making for satisfaction with spatial health and an intention to revisit. Therefore, the promotion of green satisfaction is essential for post-crisis recovery.

## 2.4. Green and Healthy B&B Rooms with Tourist Satisfaction

Further exploration of the relationship between the indoor environment of existing green B&Bs and guest comfort is essential to improve guest satisfaction and encourage them to revisit green B&Bs in the future [32,33]. A green/healthy solution provides a variety of results that are beneficial to the health of individuals and society as a whole (e.g., reducing stress, enhancing physical exercise, reducing health inequality, improving mood/emotion, reducing stress, increasing happiness, increasing mental health, improving air quality, reducing pollution, reducing noise, and improving water quality) [34]. The six parameters of indoor environmental quality (visual, thermal comfort, lighting, air quality,

acoustic) and its interrelation with human ease were reviewed by previous studies [32]. Green and healthy attributes for a B&B room have also been preferred by travelers [35].

### 2.4.1. Design of Green Indoor Environment

The design-based study has influenced sustainable tourism in the past [36]. Green environment design enhanced learning environment design and study [37,38], and green environment design has become increasingly important [39]. The design's environmental value and the importance of conceptual design relative to basic or detailed design have been widely recognized [40].

# (1) Sound environment

Isolating the room from the air and impact sounds, preventing noise, ensuring the best reverberation time in public areas, and reducing the nuisance of conversation in the B&B are directly B&B facilities' issues. Sound in a B&B environment is one of the essential items for tourists: safety and health for users, a combination of good architecture with the best acoustics, and exciting solutions [41,42].

## (2) Lighting and illumination and View

B&B room lighting positively affects consumer preferences, emotional states, and behavioral intentions [43]. Similarly, lighting temperature and comfort positively impact the perceived value, landscape perception, and behavior intentions of B&B guests [44].

For insiders, a window can meet human needs for basic information, including visual information about location, time and weather conditions, and activities and events outside the building [45]. According to previous research, apart from lighting, the view outside windows is one of the most appreciated functions [46]. It provides the possibility of maintaining continuous contact with the external environment. The existing assumptions and research findings of the preference perspective can be divided into three categories: the need for external environmental information, the need for aesthetic experience (satisfaction and stress [47]), and the need for recovery and health (Health benefits of a view of nature through the window [48,49].

# (3) Thermal comfort and Air quality

A B&B aims to provide guests with a high level of comfort [50]; however, complaints about uncomfortable thermal environments and indoor air quality (IAQ) often arise [51]. Conversely, there have been few studies on IAQ audits of B&Bs. Some previous studies have pointed out four main problems with IAQ [52]: (1) the ventilation speed is inadequate; (2) the particle concentration in some rooms is too high; (3) legionella contaminates the hot water system; and (4) the filtering effect of all air handling units (AHU) is poor [53,54].

#### 2.4.2. Design for Green Indoor Service Quality

Green service quality is also crucial for improving travelers' and employees' wellbeing [55]. Once tourists have arrived at a destination, employees' motivation will effect a positive evaluation [56].

(1) Flexible Serviceability

B&B guest rooms' technical and functional quality positively impacts a guest's perception of service quality and satisfaction [57]. Similarly, B&B service quality also positively impacts customer loyalty [58]. Other researchers have studied the relationship between the hotel industry's market positioning and business performance and assessed the positive mediating role of service quality in this relationship [59].

#### (2) Health, safety, and security

Han et al. [60] found that nature-based solutions (NBS) positively impact eco-friendly B&B guest satisfaction, mental health perception, and their intention to revisit. Jiang and Wen [13] studied the health crisis and B&B management based on the COVID-19 pandemic; they recommended that researchers go beyond the typical perceptions of the causes and

consequences of B&B hygiene and cleanliness to an in-depth study of guests' perceptions of the surface cleanliness of a particular B&B. In addition, a deeper analysis of the evolving relationship between B&Bs and the healthcare sector ('cleanliness is half of faith' [61]) is required. Kuo et al. [62] advocated for the need to establish a standard measurement for the safety culture of the hotel industry after COVID-19.

(3) Green service

Green B&B marketing is an important research area in the hospitality literature. Some previous studies have explored how companies can balance customer satisfaction with excellent service and minimal environmental impact. However, the independent influence of specific green elements of B&B services on the relationship between consumers and B&B brands has yet to be fully discussed in the B&B and tourism industry literature. Mishra and Gupta [63] proposed a framework for brand loyalty to green B&B services, measured by attribute-based green service encounters. The positive moderating effect of environmentally friendly customer attitudes shows a positive green experience [64]. Green service encounter (GSE) framework through B&B management can ensure long-term patronage by customers [65].

# 3. Methods

#### 3.1. Descriptive Statistics

Descriptive statistics can be used for visual and easy-to-understand data analysis [66]. Hwang et al. [67] used descriptive statistics to study elderly tourism well-being perceptions and outcomes. Some scholars studied the relationship between tourism and sustainability using descriptive statistics [68]. Others studied the relationship between B&Bs and customer satisfaction using descriptive statistics [69].

## 3.2. Green B&B Standards

The LEED (Leadership in Energy and Environment Design), BREEAM (Building Research Establishment Environmental Assessment Method), GB Tool (Green Building Tool), and CASBEE are evaluation tools that were studied in previous research [70]. CASBEE has more advantages in evaluating a design's built environment and service [71,72]. For this study, we chose the following green B&B standards in China: (1) "Basic Requirements and Classification of Tourist B&Bs" GBT 41648-2022; (2) "Basic Requirements and Evaluation of Tourist B&Bs" LBT065—2019; (3) "Assessment Standard for Green Hotel Building" GB/T51165-2016; (4) "Green Hotels" GB/T21084-2007; (5) "Green Tourism Hotels" LBT007-2016; (6) "Classification and Creditation for Star-rated Tourist Hotels" GB/T14308-2010; and (7) "Green Building Evaluation Standards" GBT50378-2019.

# 3.3. Delphi Method and Questionnaire Items

The Delphi method is considered a collective decision before questionnaires [73]. It was studied in previous research: the Delphi method was used to study an environmental management system for green B&B evaluation [74], and valuable advice for solving complex problems was also studied [75]. The Delphi method is also called the "expert consultation method." It is the most commonly used intuitive prediction method. In the 1950s, it was initiated by the Rand Corporation of the United States, particularly by Olaf Helmer, to predict the development of defense technology and research future social and technological issues. From the Delphi method, 30 items were selected. Figure 2 shows the design logic. The measurement items of a green B&B room for the questionnaire survey on customer satisfaction were identified (Table 1).



Figure 2. The design logic of the Delphi method and selection process of 30 research variables.

Fable 1. Measurement	items for	green	B&B room.
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Items	QN
Green indoor environment [60]	Q1
Sound environment [41,42]	Q1-1
Good sound insulation (walls, doors, windows, etc.)	1
Good sound absorption (wall decoration material)	2
Lighting and illumination and View [44]	Q1-2
Good view outside the window (suitable for room-size windows)	3
Comfortable illumination level (indoor light brightness can be adjusted)	4
Anti-glare/shading measures are good	5
More use of daylight	6
Thermal comfort and Air quality [50]	Q1-3
Good humidity control	7
Working well (materials to maintain indoor air quality/IAQ)	8
Good ventilation/natural ventilation performance	9
The type of air conditioning system that uses fresh air (there is equipment for clean and fresh air in	10
the guest room)	10
Good room temperature control (prevents high temperatures in summer and cold in winter)	11
There are non-smoking room floors (smoking room with measures to remove the smell of smoke in	10
the rooms)	12
Green indoor service quality [55,76]	Q2
Flexible service ability [57]	Q2-1
Personalized bedding is provided according to the needs of guests	13
Place green plants that are beneficial for human health	14
Good function and usability of devices (smart)	15
Good maintenance (indoor materials)	16
Flexible space layout (partially and flexibly adjust the room according to the needs of guests)	17

Table 1. Cont.

Items	QN
Health, safety, and security [13]	Q2-2
The electrical switch is installed intact and connected correctly, and its purpose is marked	18
Good natural disaster risk management (safety first-aid kit, etc.)	19
Good reliability (the equipment is installed firmly, and the spare parts are intact)	20
Countermeasures to deal with chemical/biological pollutants (with qualified passenger gas masks)	21
Having a suitable smoke alarm/automatic spray device	22
Suitable crime prevention measures (security door locks, etc.)	23
Green service [63]	Q2-3
Supply clean drinking water	24
There are recyclable disposable/non-disposable consumables	25
Cotton fabrics are neat (carpets, sofas, and curtains are tidy) (towels, bath towels, and nightgowns are soft and have good moisture absorption)	26
There is a reminder card for the replacement of cotton fabrics	27
There is an energy-saving reminder card	28
The bathroom adopts a non-slip design (non-slip mat, non-slip rod, etc.)	29
Daily disinfection of toilet basins, bathtubs, and toilets (or provide disinfectant)	30

QN: question number.

3.4. IPA (Importance-Performance Analysis)

Importance-performance analysis (IPA) is an essential study technique for management strategies that provides practical suggestions for promoting good management [77]. Choosing the best site to divide into quadrant thresholds is the main issue [78]: the datacentric (DC) method [79], the scale-centric (SC) method [80], diagonal lines (DL), or isolines (IRL) [80] were used. Compared with the previous method's review, about 80% of papers used the DC method and the average of actual importance in B&B tourism research. Therefore, the DC method is used for specifying thresholds in this study (Figure 3). Albayrak [81] studied hospitality companies using importance-performance competitor analysis (IPCA). Question 261 was used for the IPA.



Figure 3. The line of different thresholds within the IPA plot.

# 4. Results

# 4.1. Data Collection

The data survey was performed during December 2022. The 7-point Likert scale, with the options in the questionnaire, was used to measure the items. All measurement items are shown in Table 2, describing the respondents' demographics. Figure 4 shows the location sources of this survey.

**Table 2.** Profile of survey respondents (n = 261).

Variable	Ν	Percentage
	Sex	
Male	170	50.57%
Female	184	49.43%
	Age	
18–25	0	
26–30	163	8.05%
31–40	81	39.64%
41–50	64	42.91%
51-60	21	6.13%
61–70	28	3.07%
Other	28	0.38%
	Educational Level	
Associate's degree	39	9.96%
Bachelor's degree	191	79.69%
Graduate degree	110	8.81%
Other	14	1.53%



Figure 4. The location sources of the survey.

# 4.2. IPA

# 4.2.1. Profile of Survey Respondents and Reliability/Validity Analysis

SPSS 26 statistical software (IBM, New York, NY, USA) was used for analysis. The Cronbach's Alpha coefficient was 0.974 (Alpha > 0.7 means "high reliability"), indicating relatively high and acceptable reliability, and it had content validity, standard-related validity, and structural validity (Tables 3 and 4).

Table 3. Validity statistics.

		Number	%
	Valid	261	100
Cases	Excluded	0	0
	Total	261	100

**Table 4.** Reliability statistics.

Cronbach's Alpha	Number of Items
0.974	30 + 30

# 4.2.2. Data Analysis

Table 5 shows the *p*-value (Sig. 2-tailed) at <0.01 [82]. Figure 5 shows the expectimportance past-performance analysis. First, the high-priority area (Score 4) included these items: No. 5 and No. 6 (Lighting and illumination and View); No. 11 (Thermal comfort and Air quality); No. 16 (Flexible serviceability); and No. 21 and No. 22 (Health, safety, and security). Second, the priority area (Score 3) included these items: No. 8 and No. 12 (Thermal comfort and Air quality); No. 13 and No. 17 (Flexible serviceability); and No. 19 (Health, safety, and security). Third, the medium-priority area (Score 2) included these items: No. 1 and No. 2 (Sound environment); No. 3 and No. 4 (Lighting and illumination and View); No. 7 and No. 10 (Thermal comfort and Air quality); No. 14 and No. 15 (Health, safety, and security); and No. 26 (Green service). Fourth, the low-priority area (Score 1) included these items: No. 9 (Thermal comfort and Air quality); No. 18, No. 20, and No. 23 (Health, safety, and security); and No. 25, No. 27, No. 28, No. 29, and No. 30 (Green service).

Table 5. Rank, means of importance, and performance and paired sample *t*-test (df = 261).

	Paired Differences (I-P)										
No.	(Rank by)	Waightab	Std Deviation	Std. Ennon Moon	95	% a	t	Sig. (2-Tailed)	Ι	Р	Correlation
	Mean	weights	Std. Deviation	Stu. Error Mean	Lower	Upper	_	(,			
1	0.63	0.030	1.00	0.06	0.51	0.75	10.13	0.000	5.94	5.31	0.409
2	0.59	0.030	1.08	0.07	0.46	0.72	8.80	0.000	5.82	5.23	0.500
3	0.42	0.030	1.05	0.07	0.29	0.55	6.47	0.000	5.71	5.29	0.385
4	0.43	0.030	1.33	0.08	0.27	0.59	5.22	0.000	5.80	5.37	0.303
5	0.45	0.061	1.18	0.07	0.30	0.59	6.15	0.000	5.75	5.30	0.359
6	0.39	0.061	1.43	0.09	0.22	0.57	4.46	0.000	5.84	5.45	0.273
7	0.40	0.030	1.14	0.07	0.26	0.54	5.69	0.000	5.64	5.24	0.319
8	0.59	0.045	1.30	0.08	0.43	0.74	7.30	0.000	5.74	5.16	0.228
9	0.53	0.015	1.34	0.08	0.37	0.70	6.43	0.000	6.03	5.50	0.156
10	0.54	0.030	1.21	0.07	0.39	0.69	7.23	0.000	5.93	5.39	0.287
11	0.43	0.061	1.22	0.08	0.28	0.58	5.66	0.000	5.84	5.41	0.302
12	0.46	0.045	1.34	0.08	0.30	0.62	5.53	0.000	5.68	5.22	0.363
13	0.62	0.045	1.18	0.07	0.48	0.77	8.54	0.000	5.55	4.92	0.475
14	0.74	0.030	1.32	0.08	0.58	0.90	9.02	0.000	5.88	5.14	0.345
15	0.57	0.030	1.26	0.08	0.42	0.73	7.40	0.000	5.75	5.18	0.328

	Paired Differences (I-P)											
No.	(Rank by) Mean	Mainhta b		Cid Emer Marr	95%	95% <sup>a</sup>		t	Sig. (2-Tailed)	Ι	Р	Correlation
		weights	Std. Deviation	Std. Error Mean	Lower	Upper	-	(= 141104)				
16	0.54	0.061	1.17	0.07	0.40	0.68	7.43	0.000	5.80	5.26	0.323	
17	0.48	0.045	1.28	0.08	0.33	0.64	6.11	0.000	5.57	5.09	0.432	
18	0.39	0.015	1.04	0.06	0.27	0.52	6.12	0.000	5.90	5.51	0.326	
19	0.71	0.045	1.34	0.08	0.55	0.88	8.61	0.000	5.92	5.21	0.327	
20	0.30	0.015	1.19	0.07	0.16	0.45	4.12	0.000	5.81	5.51	0.330	
21	0.84	0.061	1.44	0.09	0.66	1.01	9.40	0.000	5.84	5.00	0.351	
22	0.49	0.061	1.21	0.07	0.34	0.64	6.54	0.000	5.87	5.38	0.418	
23	0.50	0.015	1.13	0.07	0.36	0.64	7.16	0.000	5.96	5.46	0.423	
24	0.51	0.015	1.13	0.07	0.38	0.65	7.33	0.000	6.09	5.58	0.351	
25	0.38	0.015	1.36	0.08	0.21	0.54	4.52	0.000	5.88	5.50	0.227	
26	0.66	0.015	1.20	0.07	0.52	0.81	8.95	0.000	5.93	5.27	0.316	
27	0.51	0.015	1.30	0.08	0.36	0.67	6.40	0.000	5.95	5.43	0.327	
28	0.49	0.015	1.29	0.08	0.34	0.65	6.17	0.000	5.78	5.29	0.278	
29	0.48	0.015	1.27	0.08	0.32	0.63	6.06	0.000	5.91	5.44	0.278	
30	0.78	0.015	1.37	0.08	0.61	0.94	9.16	0.000	6.16	5.39	0.265	

Table 5. Cont.

<sup>a</sup> Confidence interval of the difference. QN: question number. All factors' loadings are significant at p < 0.01 or 0.05. <sup>b</sup> Based on the IPA.



Figure 5. The Expect-Importance Past-Performance Analysis model.

Based on the weighted average of the score, the new weights of items were identified and are shown in Table 5. In other words, the weights of the new "evaluation model of system) (Figure 5).

## 4.3. A Dynamic Evaluation Model and Strategies

First, the new weights of items were identified through the weighted average of the score of the IPA. A new "evaluation model of green B&B room" was obtained (Figure 6).



Figure 6. The evaluation model.

Second, the evaluation model was a dynamic process: items changed when new crises or changes occurred; the weight of items could be adjusted according to different areas. The B&B style is more flexible than that of the hospitality industry.

# 5. Discussion and Conclusions

These green hospitality studies have received more research attention over the past three years worldwide after COVID-19. However, related research on green B&B rooms is not sufficient. This study will be a great help in improving the quality of green rooms for the hotel industry in the future, and it attempts to fill the gaps in research on green B&B rooms. It is useful for improving the green satisfaction of both urban and rural B&Bs in many countries and regions.

First, No. 5 (The good view outside the window (suitable for room-size windows)) and No. 6 (More use of daylight (Lighting and illumination and View)) were both in the high-priority area. This fact empirically shows that a view can influence our mental and physical health. No. 11 (Reasonable room temperature control (prevents high temperatures in summer and cold in winter)) showed that "Thermal comfort and Air quality" need to perform more functions. No. 5 and No. 6 all belonged to the "Green indoor environment." No. 16 (Good maintenance (indoor materials) (Flexible serviceability)) showed that the building environment needs to be constantly updated and designed. No. 21 (Countermea-

sures to deal with chemical/biological pollutants (with qualified passenger gas masks)) and No. 22 (Having a suitable smoke alarm/automatic spray device (Health, safety, and security)) both showed that green management with health and safety is more and more critical. No. 16, No. 21, and No. 22 all belonged to the "Green indoor service quality" area. These are the most vital green B&B room improvement strategies that must be the top and high-priority after COVID-19.

Second, No. 8 (Working well (materials to maintain indoor air quality (IAQ))), No. 12 (There are non-smoking room floors (smoking rooms with measures to remove the smell of smoke in the rooms) (Thermal comfort and Air quality)), No. 13 (Personalized bedding is provided according to the needs of guests), No. 17 (Flexible space layout (partially and flexibly adjust the room according to the needs of guests) (Flexible serviceability)), and No. 19 (Health, safety, and security) need to be the priority after COVID-19. For example, a BOX450 was designed for a way to provide the "Flexible space" mentioned in No. 17 (Figure 7).



**Figure 7.** BOX450: One design of a flexible space layout (N0.17). Note: The selection of the basic modulus is as follows: According to the relevant data in GB 10000-88 Human Dimensions of Chinese Adults, select a group of data, select 450 mm as the minimum modulus, and further combine them to form other different furniture sizes.

Third, No. 1 (Good sound insulation (walls, doors, windows, etc.)), No. 2 (Good sound absorption (wall decoration material) (Sound environment)), No. 3 (Anti-glare/shading measures are reasonable), No. 4 (Comfortable illumination level (indoor light brightness can be adjusted) (Lighting and illumination and View)), No. 7 (Good humidity control), No. 10 (The type of air conditioning system that uses fresh air (there is equipment for clean and fresh air in the guest room) (Thermal comfort and Air quality)), No. 14 (Place green plants that are beneficial for human health), No. 15 (Good function and usability of devices (smart) (Health, safety, and security)), No. 24 (Supply clean drinking water), and No. 26 (Cotton fabrics are neat (carpets, sofas, and curtains are tidy) (towels, bath towels, and nightgowns are soft and have good moisture absorption) (Green service): these are all needed to maintain good standards.

Fourth, No. 9 (Good ventilation/natural ventilation performance (Thermal comfort and Air quality)), No. 18 (The electrical switch is installed intact and connected correctly, and its purpose is marked), No. 20 (Good reliability (the equipment is installed firmly, and the spare parts are intact)), No. 23 (Suitable crime prevention measures (security door locks, etc.) (Health, safety, and security)), No. 25 (There are recyclable disposable/nondisposable consumables), No. 27 (There is a reminder card for the replacement of cotton fabrics), No. 28 (There is an energy-saving reminder card), No. 29 (The bathroom adopts a non-slip design (non-slip mat, non-slip rod, etc.)), No. 30 (Daily disinfection of toilet basins, bathtubs, and toilets (or provide disinfectant) (Green service)): these have long remained under constant common attention.

The increased focus on these strategies will not increase the building renovation cost. Conversely, adding these strategies will not increase the hotel's operating costs. More importantly, these strategies are a change from the past.

This study attempted to use the dynamic evaluation model of the green B&B room after COVID-19, and it can also be discussed for other regions experiencing the same situations. Although some aspects of the evaluation of B&Bs were studied, there have been few evaluation studies after COVID-19 control measures ended. Moreover, this study provided a dynamic evaluation model for fixing a gap in the previous static evaluation model study. It will be easier for practitioners, policymakers, and scholars to quickly get different satisfaction results from different groups with the linked targets for improving sustainable hospitality development. It can also be conducted at different times and in different areas.

Due to limited resources, the sample size of the objects in the current study was limited. Therefore, our plan is to investigate other areas next to compare the differences and summarize the similarities from the following perspective: after COVID-19, changes have exceeded our expectations. Although this process may be controversial, at least we have taken the first step: try to fill the gaps in green B&Bs. In this way, we look forward to cooperating with experts around the world to establish a global green B&B room research system.

Author Contributions: Conceptualization, G.C. and M.Z.; Data curation, G.C. and S.X.; Formal analysis, G.C.; Funding acquisition, G.C., M.Z., X.Z., H.X., Z.C., C.L., K.L. (Ke Liu) and Z.Y.; Investigation, G.C., M.Z. and K.L. (Ke Liu); Methodology, G.C.; Project administration, G.C., X.Z., S.X. and Z.Y.; Resources, G.C., M.Z., K.L. (Kang Liu) and Z.Y.; Software, G.C.; Supervision, G.C., M.Z., X.Z., Z.C. and C.L.; Validation, G.C., M.Z., H.X., K.L. (Ke Liu) and S.X.; Visualization, G.C. and K.L. (Kang Liu); Writing—original draft, G.C.; Writing—review and editing, G.C. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by Shaoxing "Home of Celebrities" Talent Program (Gangwei Cai); China National Key R&D Program, grant number 2018YFE0106100; National Natural Science Foundation of China, grant number 51878592; Zhejiang University Excellent Doctoral Dissertation Funding, grant number 420022C; Zhejiang Provincial Construction Research Project, grant number 2021K035; Zhejiang Provincial Construction Research Project, grant number 2021K035; Zhejiang Provincial Construction Research Project, grant number 2021K035; Zhejiang Provincial Construction Research Project, grant number 2022K049; Zhejiang Provincial Special Projects of Building Energy Conservation Standards, Science and Technology, and Urban and

Rural Planning: Study how to improve the architectural design and create high-quality products of the times.

**Data Availability Statement:** Data are available on request due to restrictions, e.g., privacy or ethics. The data presented in this study are available on request from the corresponding author. The data are not publicly available due to comments from the authors.

Conflicts of Interest: The authors declare no conflict of interest.

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