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A Combination of FDM, DEMATEL, and DANP for Disclosing the Interrelationship of Influencing Factors in Rural Homestay Business: Empirical Evidence from China

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Abstract: As a rural tourism product, homestays play an essential role in sustainability. The operation of homestay business is directly linked to the success or failure of community-based tourism development. By taking rural homestay business in Zhejiang as a research object, the paper aims to clarify the interrelationships among influencing factors in the operation of rural homestay business from a performance perspective. Based on multi-criteria decision making (MCDM) techniques, this paper not only constructed the evaluation system of homestay business in the Chinese context by the Fuzzy Delphi Method (FDM), but also disclosed the interrelationships of criteria and aspects by a decision-making trial and evaluation laboratory (DEMATEL) and the DEMATEL-based analytical network process (DANP). Results show that: (1) 5 aspects and 31 criteria comprise the evaluation system of homestay business, (2) the aspects and criteria with high global weight are nearly clustered into the effect group, (3) the weight of service quality and homestay geist and community co-prosperity as the rank top two, (4) more than these, hardware facilities construct the product features of homestays because of the role of driving elements, (5) owing to the core elements, criteria about operational efficiency become guiding principles of homestay business, and (6) service quality and integrated utilization of socio-cultural resources underpin the sustainable development of homestay business in the long run. Therefore, the interrelationships of aspects and criteria provide further insights and underline the focus on homestay business for practitioners. At the same time, these serve as an effective administration tool for industry administrations. These will lay a solid foundation to enhance the level of homestay business and boost the sustainable development of community-based tourism.

Keywords: rural homestay business; influencing factor; interrelationships; FDM; DEMATEL; DANP

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1. Introduction

One type of tourism development that adheres to the principles of sustainable tourism is community-based tourism (CBT), which is a sub-category of sustainable tourism with the recognition of local community-oriented projects. CBT products include tourist activities and accommodation services [1]. From a sustainable rural tourism perspective, accommodation services through community homestay are regarded as the major component of CBT products [2]. Homestays are potential income sources for rural communities that enable their unique culture to be marketed as tourism products [3]. Furthermore, rural tourism products improve livelihoods, promote poverty alleviation, and enhance the protection of biodiversity and cultural heritage development [4]. As an attractive sustainable rural tourism product [5], homestay has been long advocated as not only an integral part of sustainable tourism development [6], but also a catalyst for socio-cultural and economic development in rural community development [7].

The first 20 years of this century can be described as a golden period for the development of China's homestay industry. For example, by the end of 2020 in Zhejiang

Province, the province's total investment in homestays reached CNY 25.4 billion, and 19,214 homestays were registered and licensed to operate. Moreover, the number of guest rooms exceeded 200,000, the annual average household income totaled CNY 424,000, the total operating income surpassed CNY 8.1 billion, and the industry attracted direct employment of more than 150,000 people. In addition, the homestay cluster has initially taken shape, especially in Hangzhou and Huzhou, which each had more than 1700 homestays. In short, regardless of quantity or quality, operating efficiency or ability, products and formats, word-of-mouth and brand, homestays in Zhejiang have stood in the forefront of the trend in China. Due to this trend, unique phenomena gradually emerge, and local experience is also quickly summarized and promoted by media and authorities. Zhejiang has been becoming a benchmarking area for homestay development in China.

Due to a cross-disciplinary research topic about homestay, prior literature about homestays demonstrate the diversity of perspectives as well as diversity in research quality. Through a systematic literature review about rural homestays and sustainability in tourism in the year 2010–2020, Janjua, Krishnapillai, and Rahman (2021) found that homestay research concentrates mainly on six directions: homestays as a community-based ecotourism product (CBET); homestays, economic sustainability, and poverty alleviation; homestays and the role of NGOs; homestays as a cultural tourism product; women's participation in homestays; and homestays as potential income sources for rural communities [8]. The homestay studies in China are more concerned about the definition and classification, planning and design, management, resource evaluation, and guarantee mechanisms [9]. Thence, there are obvious differences in the topics of homestay study in other countries [10–14]. Homestay operation is important in economic development, and governments of many developing countries are actively promoting homestays because it not only provides additional income and employment [15] but also assists in distributing the benefits of tourism to rural areas [16]. Hence, homestay operation in rural communities can be a stepping stone toward sustainable development by enriching the destination's image and reducing poverty [16]. Although homestay plays an essential role in sustainability [17], there is still a considerable gap in the study concerning operation results of homestay business in China. As a result, to contribute to the study gap, capture deeper insights, and explore the direction of homestay development in the future, the study attempts to construct an evaluation system of affecting factors regarding homestay business from a performance perspective and disclose the interrelationships among them by quantification approaches.

This paper proposes a hybrid approach based on the Fuzzy Delphi Method (FDM), decision-making trial and evaluation laboratory (DEMATEL), and analytic network process (ANP) to disclose the interrelationships of relevant factors. More specifically, this study answers the following research questions:

RQ 1. What are the main factors to measure homestay performance?

RQ 2. What are the network and interrelationships among performance factors?

RQ 3. What are the priorities of these factors?

The remainder of the paper is organized as follows. Section 2 examines the existing literature by highlighting performance evaluation, efficiency research about the accommodation industry, and MCDM. Section 3 formulates the study design, which is accompanied by detailing the study method. Section 4 demonstrates the results of empirical analysis and Section 5 conducts the discussion. Section 6 concludes with implications, several limitations, and further suggestions.

2. Literature Review

2.1. Success Factors of Homestay Business

To some extent, success can be viewed as a specific aspect of performance [18]. In other words, success can be defined according to a certain element of performance [19]. The success and sustainability of homestay businesses are mainly determined by the extent to whether the homestay operators grasp the business focus at the base of the relationship among success factors.

The rural community-based homestays can be categorized into small-scale community-run operations [20]. Prior literature indicated that small business success is closely related to small business performance. Measuring organization performance has shifted to a combination of financial and non-financial measures as the most suitable approach [21].

Homestay has been organized as one way to provide cheap budget accommodation to tourists and the best way to get closer to nature and traditions of a particular ethnic culture [16]. As a strategy for rural development [22], homestay programs involve the host family, the rural community, the existing village organizations, and other government organizations [23]. Otherwise, the products and homestay operators come to be involved in a homestay business that is part of a homestay program. Therefore, the literature on success or performance of homestays is reviewed from the program level and business level.

From the perspective of a homestay program, scholars are more concerned about the affecting factors for development of CBT and the relationship between the operation level of tourism business and the development of certain communities. Zulkefli, Aziz, and Radzol (2021) developed a framework on the performance success of a community-based homestay tourism program in Malaysia through revealing 12 important dimensions by qualification research [24]. Basak et al. (2021) inspected the relationship between sustainable homestay tourism development and tourist satisfaction regarding socio-cultural, economic, and environmental sustainability by structural equation modeling (SEM) [25]. Socio-cultural sustainability and economic sustainability directly impact the overall satisfaction of the tourist, but the environmental component indirectly affects visitor satisfaction. Bhalla and Bhattacharya (2019) stated that visitors' satisfaction as well as perception are the main elements that successfully drive the selection of destination, the consumption of the local products, and the generation of return visits in homestay tourism [26]. Purbasari and Manaf (2018) summarized the characteristic indicators of community-based tourism in Indonesia by comparative analysis, and the success dimensions for CBT from the evaluation research work include local community, good leadership, strong collaboration with government and private agencies, uniqueness of homestay attractions, and environmental conservation [27]. Kayat and Zainuddin (2016) listed 12 criteria of performance success of community-based rural homestays in rural Malaysia by a qualitative method [20]. Daud et al. (2015) concluded that capacity and ability to run the program are important success criteria to the homestay program [28]. Some studies have explored the following success dimensions for CBT across Asia: local community, good leadership, strong collaboration with government and private agencies, uniqueness of homestay attractions, and environmental conservation.

From the angle of homestay operation, some studies mainly focused on the systematic and holistic performance of homestay operation, especially regarding the performance system and operation level of homestay business. Thanvisitthpon (2021) refined 6 dimensions from 31 updated indicators in a sustainable Thailand homestay business by exploratory factor analysis (EFA) and determined the factor loadings and reliability of the components and indicators by confirmatory factor analysis (CFA) [29]. The importance of indicators was prioritized by the factor loading. Devadas and Jayasooriya (2019) developed a conceptual framework of homestay tourism entrepreneurs' success to explain the phenomenon of homestay tourism entrepreneurs' success by a qualitative grounded theory study [30]. Hu et al. (2012) evaluated the performance of homestays in Taiwan by combining ANP with fuzzy theory, in which surroundings of the building and features, service quality, homestay facilities, homestay operation and management, and homestay geist and community co-prosperity constituted the homestay performance system [31].

From another perspective, a few studies highlighted that individual organizational or social factors affect certain elements of homestay performance, such as customer loyalty and service quality. These factors include good homestay management and arrangement, the arrangement of learning activities, and the reasonable price for tourism and homestay service [32], social media marketing [33], and community participation [34]. The sincere intention and perseverance of the head of the village [35], collaboration and partnerships among tourism stakeholders [13], customer's need and requirements [36], surroundings of

the building and features, homestay facilities, homestay operation and management, homestay geist and community co-prosperity [37], leadership and community support [38], and leadership enhancement all improve the ability and capacity of a homestay program [39].

To sum up, in a homestay program, multiple parties are involved, and the evaluation factors are mostly external and macro factors, such as policies from authorities and collaboration with parties, etc., which are not under the control of hosts. In homestay business, if a certain element of performance is measured, the evaluation factors are relatively scattered and non-systematic, which include community support, social media marketing, price, and collaboration. If overall performance is measured, the evaluation factors are systematic. In light of this study's aim, we prefer to measure the performance of homestay business from a systematic and holistic perspective.

2.2. MCDM Techniques

As an important tool for operation study, multi-criteria decision making (MCDM) not only offers the possibility to assess some conflicting factors [40] and decide which alternative is most appropriate based on different factors [41], but also assists decision makers' subjective assessments about the interrelationships of performance factors [42].

Ishikawa et al. (1993) introduced fuzzy theory into the traditional Delphi method, and two methods of the maximum–minimum value of the cumulative number of distributions and fuzzy integrals were established. The expert opinions were integrated into a fuzzy number process, which was called the FDM [43].

DEMATEL and ANP are two widely studied MCDM approaches in determining the influences and interdependence between criteria [44]. DEMATEL was first developed in a Science and Human Affairs Program in the early 1970s [45]. Through the analysis, all elements can be classified into a cause–effect group, which helps scholars understand the structural relationship between elements and plot a network relationship map. Then, the relative weight of the criteria is calculated using ANP [46,47]. Saaty proposed the ANP for decision ranking priorities because it releases the restriction of hierarchical structure among decision levels. However, due to the influence of the limited capacity of human thinking and the shortcomings of a one to nine scale [48], its consistency is not easy to achieve [49] when a matrix has high order. Hence, to lessen the burden of the pairwise comparison questions, Ou Yang et al. (2008) used the DANP method to directly replace the unweighted super-matrix of ANP with the total influence matrix generated by DEMATEL [50].

Given feasibility and effectiveness, these methods are widely applied in many domains [51–55].

3. Method and Material

3.1. Research Design

The study comprises three main phases: (1) filtering the homestay performance factors by FDM, (2) disclosing the interrelationships by the network relation map (NRM) and quadrant diagram by the DEMATEL technique, and (3) calculating the weights of factors by DANP.

3.2. Proposed Hybrid MCDM Model

A model that incorporates FDM, DEMATEL, and ANP is proposed here to disclose the interrelationships. The steps of the proposed model are as follows:

Step 1: FDM is applied to filter the performance factors.

1. After designing an FDM questionnaire for the performance factors and forming an appropriate panel, each expert must give a possible interval value for each factor. In this interval, the minimum denotes the most conservative perception value, and the maximum represents the most optimistic perception value for the factors. The intuition value of the individual importance of each factor given by the experts indicates the optimal value (A) of each factor.

2. For each factor, the counting of the most conservative and most optimistic values given by all experts and the extreme values that fall outside twice the standard deviation are deleted. Then, the maximum, minimum, and geometric mean values of the remaining most conservative and most optimistic values that have not been excluded are calculated. The most conservative triangular fuzzy number $C^i = \left(C_L^i, C_M^i, C_U^i\right)$ and most optimistic triangular fuzzy number $O^i = \left(O_L^i, O_M^i, O_U^i\right)$ are calculated for each evaluation factor, as shown in Figure 1.

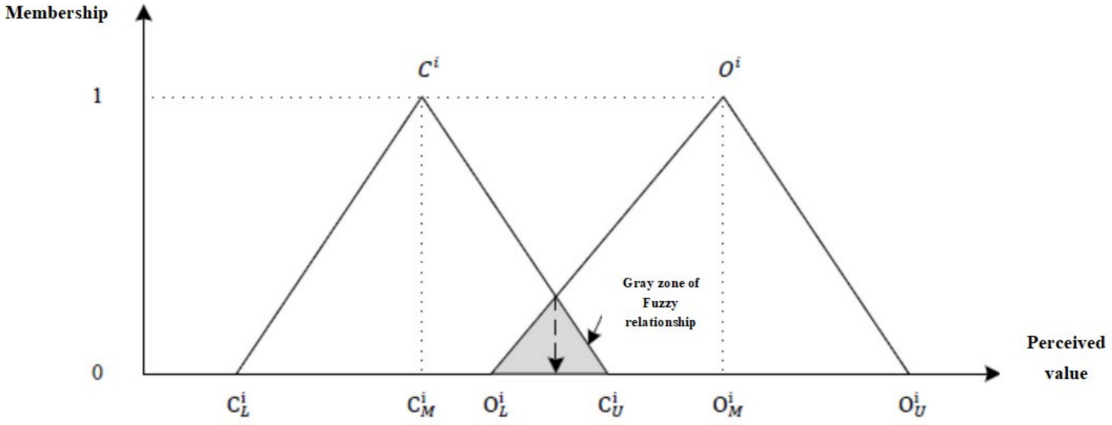

Figure 1. Gray zone diagram of the fuzzy relationship between the two triangle fuzzy numbers.

3. Whether the expert opinions have reached a consensus is judged and tested by the following terms:

(1) If no overlap occurs between the two triangular fuzzy numbers, that is, $\left(C_U^i \le O_L^i\right)$, then each expert opinion has a consensus section in the interval. Therefore, the consensus value G^i of the evaluated factor is equal to the arithmetic average value of C_M^i and O_M^i, as shown in Equation (1):

$$G^i = \frac{C_M^i + O_M^i}{2} \tag{1}$$

(2) If the two triangular fuzzy numbers overlap, that is, $(C_U^i > O_L^i)$, and the gray area of the fuzzy relationship $(Z^i = C_U^i - O_L^i)$ is less than the interval range $(M^i = O_M^i - C_M^i)$ of the geometric average value of the optimistic and the conservative evaluation factor, then the panel opinion does not reach a consensus as a whole, but the difference among them does not result in disagreement. Therefore, the factors' consensus value G^i is calculated as shown in Equation (2):

$$G^i = \left[\left(C_U^i * O_M^i\right) - \left(O_L^i * C_M^i\right)\right] / \left[\left(C_U^i - C_M^i\right) + \left(O_M^i - O_L^i\right)\right] \tag{2}$$

(3) If the two triangular fuzzy numbers overlap, that is, $(C_U^i > O_L^i)$, and the gray area of the fuzzy relationship $(Z^i = C_U^i - O_L^i)$ is more than the interval range $(M^i = O_M^i - C_M^i)$ of the geometric average value of the optimistic and the conservative evaluation factor, then the opinion interval value of each expert has no consensus section, and two different scores of experts lead to a divergence of opinions. Steps 1 to 3 must be repeated until all factors can reach convergence, and the consensus value G^i is obtained.

4. A threshold value is set to construct the evaluation's system.

The selection of the evaluation criteria is based on the comparison of the threshold value S and the consensus importance value G^i, and the threshold value setting standard directly affects the number of screening evaluation criteria. In collating relevant research, the method of threshold value setting includes the threshold value range of approxi-

mately between 6–7 [56], subjective identification of decision makers [57], and arithmetic average [58].

Step 2: DEMATEL is employed to map the interrelationships among factors.

1. Differentiating the criteria relationship.

The factors' relationships are assessed by using an integer scale of "no influence (0)", "low influence (1)", "medium influence (2)", "high influence (3)", and "very high influence (4)". Data are obtained by questionnaires. If n criteria are present, $n \times (n-1)$ compare in pairs.

2. Generating direct influence matrix.

The direct influence matrix $D_k = [d_{ij}^k]_{n*n}$ can be formed, where all principal diagonal elements are equal to zero and d_{ij} represents the influence strength of criterion i on j.

3. Normalizing the direct influence matrix.

When the direct influence matrix D is acquired, the normalized direct influence matrix $X = [x_{ij}]_{n*n}$ can be achieved by Equations (3) and (4):

$$\lambda = \frac{1}{\max\limits_{1 \le i \le n} \left(\sum_{j=1}^{n} d_{ij}\right)} \tag{3}$$

$$X = \lambda * D \tag{4}$$

4. Constructing the total influence matrix.

The total influence matrix $Z = [z_{ij}]_{n*n}$ is then computed by summing the direct effects and all of the indirect effects by Equation (5):

$$Z = z_{ij} = \log_{k \to \infty}(X + X^2 + X^3 + \ldots + X^K) = \frac{X}{I - X} = X(I - X)^{-1} \tag{5}$$

in which I is denoted as the identity matrix.

5. Setting the threshold value.

If t_{ij} is greater than the threshold, it will be retained, otherwise, it will be 0. The matrix of the retained value is called T^*, which is the critical value matrix. The network graph determined by T^* can be obtained.

6. Producing the influence relations map (IRM).

Let t_{ij} be the (i,j) element of matrix T^*. The sum of the ith row and the sum of the jth column, b_i and r_j, respectively, are obtained as follows:

$$b_i = \sum_{j=1}^{n} t_{ij}, (i = 1,\ 2,\ 3, \ldots, n) \tag{6}$$

$$r_j = \sum_{i=1}^{n} t_{ij}, (j = 1,\ 2,\ 3, \ldots, n) \tag{7}$$

To visualize the complex causal relationships among divisions using a visible structural model, one can develop an IRM from the values of $b + r$ and $b - r$, represented on the x-axis and the y-axis, respectively [59]. Finally, an IRM can be created by mapping the dataset of $(b + r, b - r)$, providing valuable insights for decision making.

7. Distinguishing importance and cause.

Let $i = j$ and $i, j \in \{1, 2, \ldots, n\}$, and the horizontal axis vector $(b + r)$ named "Prominence" illustrates the strength of influences that are given and received by the factor. Alike, the vertical axis vector $(b - r)$ called "Relation" shows the net effect that the factor contributes to the system. If $(b - r)$ is positive, then the factor F_j has a net influence on the other

factors and can be grouped into the cause group. If $(b - r)$ is negative, then the factor F_j is influenced by the other factors on the whole and should be grouped into effect group [60].

8. Selecting and explaining key factors.

Thus far, DEMATEL's key criteria selection methods mainly include the causality diagram [61,62] and quadrant determination methods [63–65]. Both use importance as the x-axis and cause as the y-axis. The coordinate intersection of the causality diagram method is the origin, and the influence relationship matrix is used to clarify the influence relationship between the criteria. The intersection origin of the quadrant determination method is the arithmetic average of the cause and importance, which is to divide the quadrants.

Step 3: Calculating the weight by DANP.

Based on the total relation matrix of DEMATEL, and through the following steps, ANP calculation can detect magnitudes among factors and their levels of importance to the whole system [66].

1. Normalizing the total relation matrix.

The total relation matrix is normalized by Equations (8)–(11). Aspects are denoted by T_A while criteria are denoted by T_C. The total criteria relation matrix ($T_C = [T_C^{ij}]_{n*n}$), as shown in Equation (9), is made of m aspects and n_1 to n_m criteria each. Am refers to the mth aspect. C_{nm} represents the mth criteria in the nth aspect. T_C^{ij} is the principal eigenvector of the influences of the elements in the ith aspect, as compared with the ith aspect.

$$A_1 \dots A_j \dots A_m$$

$$C_{11} \dots C_{1n_1}\ C_{j1} \dots C_{jn_j}\ C_{m1} \dots C_{mn_m}$$

$$T_C = \begin{matrix} \\ C_{11} \\ \vdots \\ C_{1n_1} \\ \\ C_{i1} \\ \vdots \\ C_{im_i} \\ \\ C_{m1} \\ \vdots \\ C_{mn_m} \end{matrix} \begin{matrix} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \end{matrix} \begin{matrix} A_1 \\ \\ \vdots \\ \\ A_i \\ \\ \vdots \\ \\ A_m \end{matrix} \begin{bmatrix} T_c^{11} & \cdots & T_C^{1j} & \cdots & T_C^{1m} \\ \\ \vdots & & & & \vdots \\ \\ T_C^{i1} & \cdots & T_C^{ij} & \cdots & T_C^{im} \\ \\ \vdots & & & & \vdots \\ \\ T_C^{m1} & \cdots & T_C^{mj} & \cdots & T_C^{mm} \end{bmatrix} \tag{8}$$

The total criteria relation matrix T_C can be normalized by total degrees of effect and influence of the aspects to obtain T_c^*, as shown in Equation (9):

$$d_{ci}^{11} = \sum_{j=1}^{m_1} t_{ij}^{11},\ i = 1, 2, \dots . m_1$$

$$T_{c*}^{11} = \begin{bmatrix} t_{c1}^{11}/d_{c1}^{11} & \dots & t_{c1j}^{11}/d_{c1}^{11} & \cdots & t_{c1n_1}^{11}/d_{c1}^{11} \\ \vdots & & \vdots & & \vdots \\ t_{ci1}^{11}/d_{ci}^{11} & \dots & t_{cij}^{11}/d_{ci}^{11} & \dots & t_{cin_1}^{11}/d_{ci}^{11} \\ \vdots & & \vdots & & \vdots \\ t_{cn_11}^{11}/d_{cn_1}^{11} & \dots & t_{cn_1j}^{11}/d_{cn_1}^{11} & \dots & t_{cn_1n_1}^{11}/d_{cn_1}^{11} \end{bmatrix} = \begin{bmatrix} t_{c11*}^{11} & \cdots & t_{c1j*}^{11} & \cdots & t_{c1n_1*}^{11} \\ \vdots & & & & \vdots \\ t_{ci1*}^{11} & \cdots & t_{cij*}^{11} & \cdots & t_{cin_1*}^{11} \\ \vdots & & & & \vdots \\ t_{cn_11*}^{11} & \cdots & t_{cn_11*}^{11} & \cdots & t_{cn_1n_1*}^{11} \end{bmatrix}$$

and

$$\mathrm{T}_c^* = \begin{bmatrix} T_{c*}^{11} & \cdots & T_{c*}^{1j} & \cdots & T_{c*}^{1m} \\ \vdots & & & & \vdots \\ T_{c*}^{i1} & \cdots & T_{c*}^{ij} & \cdots & T_{c*}^{im} \\ \vdots & & & & \vdots \\ T_{c*}^{m1} & \cdots & T_{c*}^{mj} & \cdots & T_{c*}^{mm} \end{bmatrix} \tag{9}$$

Based on T_C, the total aspect relation matrix T_A can be generated from the total criteria matrix by Equation (10), where t_A^{ij} is the average of elements of the matrix T_C^{ij}.

$$\mathrm{T}_A = \begin{bmatrix} t_A^{11} & \cdots & t_A^{1j} & \cdots & t_A^{1m} \\ \vdots & & & & \vdots \\ t_A^{i1} & \cdots & t_A^{ij} & \cdots & t_A^{im} \\ \vdots & & & & \vdots \\ t_A^{m1} & \cdots & t_A^{mj} & \cdots & t_A^{mm} \end{bmatrix} \tag{10}$$

The total aspect matrix T_A can be normalized by Equation (11) to obtain T_A^*, representing the weights of aspects.

$$t_A^i = \sum_{j=1}^{m} t_A^{ij}$$

$$\mathrm{T}_A^* = \begin{bmatrix} t_A^{11}/t_A^1 & \cdots & t_A^{1j}/t_A^1 & \cdots & t_A^{1m}/t_A^1 \\ \vdots & & & & \vdots \\ t_A^{i1}/t_A^i & \cdots & t_{dA}^{ij}/t_A^i & \cdots & t_A^{im}/t_A^i \\ \vdots & & & & \vdots \\ t_A^{m1}/t_A^m & \cdots & t_A^{mj}/t_A^m & \cdots & t_A^{mm}/t_A^m \\ \vdots & & & & \end{bmatrix} = \begin{bmatrix} T_{A*}^{11} & \cdots & T_{A*}^{1j} & \cdots & T_{A*}^{1m} \\ \vdots & & & & \vdots \\ T_{A*}^{i1} & \cdots & T_{A*}^{ij} & \cdots & T_{A*}^{im} \\ \vdots & & & & \vdots \\ T_{A*}^{m1} & \cdots & T_{A*}^{mj} & \cdots & T_{A*}^{mm} \end{bmatrix} \tag{11}$$

2. Building the unweighted super-matrix.

By employing Equation (12), an unweighted super-matrix is obtained.

$$\mathrm{w} = (\mathrm{T}_c^*)' \tag{12}$$

3. Constructing the weighted super-matrix.

Multiplying the normalized total criteria relation matrix (T_c^*) with the normalized total aspect relation matrix (T_A^*) will make the original weighted super-matrix S, as shown in Equation (13). Normalization by setting the "all columns sum" to unity in the super-matrix obtains the weighted super-matrix. This step is very similar to the concept of the Markov chain for ensuring that the sum of the probabilities of all states equals 1 [67].

$$\mathrm{S} = \begin{bmatrix} T_{C*}^{11} \times T_{A*}^{11} & \cdots & T_{C*}^{1j} \times T_{A*}^{1j} & \cdots & T_{C*}^{1m} \times T_{A*}^{1m} \\ \vdots & & & & \vdots \\ T_{C*}^{i1} \times T_{A*}^{i1} & \cdots & T_{C*}^{ij} \times T_{A*}^{ij} & \cdots & T_{C*}^{im} \times T_{A*}^{im} \\ \vdots & & & & \vdots \\ T_{C*}^{m1} \times T_{A*}^{m1} & \cdots & T_{C*}^{mj} \times T_{A*}^{mj} & \cdots & T_{C*}^{mm} \times T_{A*}^{mm} \end{bmatrix} \tag{13}$$

A column-stochastic super-matrix S^* is further transposed by the weight of super-matrix S, as shown in Equation (14)

$$S^* = \begin{bmatrix} T_{C*}^{11} \times T_{A*}^{11} & \cdots & T_{C*}^{i1} \times T_{A*}^{i1} & \cdots & T_{C*}^{m1} \times T_{A*}^{m1} \\ \vdots & & & & \vdots \\ T_{C*}^{1j} \times T_{A*}^{1j} & \cdots & T_{C*}^{ij} \times T_{A*}^{ij} & \cdots & T_{C*}^{mj} \times T_{A*}^{mj} \\ \vdots & & & & \vdots \\ T_{C*}^{1m} \times T_{A*}^{1m} & \cdots & T_{C*}^{im} \times T_{A*}^{im} & \cdots & T_{C*}^{mm} \times T_{A*}^{mm} \end{bmatrix} \quad (14)$$

4. Determining the weights of factors.

Weighted super-matrix S^* is limited by raising its power $(\lim_{k\to\infty} (S^*)^k$ until it converges and becomes a long-term stable super-matrix. This stable convergence value is the relative weight of the evaluation criteria.

3.3. Evaluation Framework of Homestay Business

Considering most scholars' suggestions about applying multiple constructs and measurement factors to measure corporate performance [68], this study uses multiple subjective factors to evaluate organizational performance, including financial and non-financial performance factors.

On the basis of the homestay performance evaluation framework developed by [31], some adjustments were made based on relevant experts' opinions. The opinions were summarized as follows: First, the performance evaluation framework proposed by [31] was affirmed because it coincides with the main aspects of homestay business at present, comprising operation and management, service quality, facility configuration, internal and external environment, and homestay geist and community co-prosperity. Next, according to the previous literature, routine financial criteria in accommodation essentially reflect the level of homestay operation and management to a large degree, including overnight visitors, operating income, actual room nights rented, room occupancy rate, and average room price. These financial criteria should be incorporated into the operation and management of homestays, and the initial criteria under operation and management of homestays need to be reclassified into service quality and surroundings of the building and features according to experts' opinions. Ultimately, owing to the small scale and limited operating strength of homestays, their operation is extremely dependent on the internet platform. Internet-based operation capability in homestay operation and management should also become a critical factor to represent the level of homestay operations and management in China.

The evaluation framework of homestay business in this study and the operational definitions of related aspects are shown in Tables 1 and 2.

Table 1. Evaluation framework of homestay business.

Aspect	Criteria	References
Surroundings of the building and features	Utilizing natural ventilation sufficiently Utilizing plenty of natural light Using non-toxic paint Maintaining the land's vitality and good condition in the process of design and construction Incorporating the local heritage and landscape elements into design Beautification and uniqueness of the interior design Greenization and uniqueness of the garden design Room themes and features Homestay features Overall ambience forming	Hu et al. (2012) [31]

Table 1. *Cont.*

Aspect	Criteria	References
Service quality	Service attitude Pick-up service Information service Catering service and quality Room tidiness Room coziness Room privacy Safety Overall tidiness and hygiene	Hu et al. (2012) [31]
Homestay facilities	Cooking facilities Parking space Safety facilities Medical aid Room settings	Hu et al. (2012) [31]
Homestay operation and management	Overnight visitors Operating income Actual room nights rented Room occupancy rate Average room price Internet-based operation capability	Expert interview
Homestay geist and community co-prosperity	Degree of interaction between hosts and lodgersGuiding services Arranging local experiential activities and food Contribution to living quality of local community Initiating preserving actions toward local resources Promoting and preserving local cultural resources	Hu et al. (2012) [31]

Table 2. Definition of aspects.

Aspects	Definition
Surroundings of the building and features	The entire exterior and interior design of the homestay. Local cultural features are demonstrated and incorporated into the homestay.
Service quality	Customer satisfaction of services provided by homestay proprietors.
Homestay facilities	Hardware of the homestay.
Homestay operation and management	Homestay owners manage the financial results and marketing capabilities of homestays.
Homestay geist and community co-prosperity	The homestay proprietors carry out the homestay operation in person and frequently interact with their guests and run the homestay business with a concept of incorporating it into its local community to help the local economy prosper.

4. Empirical Analysis

4.1. Factor Screening

The subjective evaluation of the factors' importance mainly relies on the expert's personal experience and professional background. In regard to the number of expert groups, Fremont et al. (1970) declared that more than five interviewees produced better judgments than did individuals [69]. Robbins (1994) also suggested that the number of experts required for group decision-making issues should be five to seven [70]. Therefore, five questionnaires about FDM were issued and collected by email in March 2020. Table 3 illustrates the information of respondents.

Table 3. Information of respondents.

No.	Gender	Occupation	Working Time (Year)	Region	Education Degree
1	Male	Education	32	Hangzhou	Master
2	Female	Education	30	Hangzhou	Doctor
3	Female	Homestay	5	Tonglu	Junior College
4	Male	Homestay	10	Chunan	High School
5	Female	Homestay	8	Ninghai	Junior High School

The criteria in Table 1 consisted of the questionnaire about FDM. A 1–10 rating scale was adopted in the questionnaire, and the higher the score, the more important it is. This study set the threshold value according to the arithmetic mean of the optimal value. In other words, the overall arithmetic mean was calculated based on the geometric mean of the optimal value of the expert group. Then, the threshold value equaled the arithmetic mean multiplied by 0.8 according to the 80/20 rule. Therefore, the threshold value of this study was 5.433. Table 4 demonstrates the results of factors screening.

Table 4. Summarized result of FDM.

Aspect	Criterion	Geometric Mean			M	Z	Verification	Expert Consensus G
		C	O	A			M-Z	
Surroundings of the building and features (A)	Utilizing natural ventilation sufficiently	2.93	6.73	5.50	3.80	−2	5.80	4.94
	Utilizing plenty of natural light (A1)	3.03	8.26	7.10	5.23	−2	7.23	6.62
	Using non-toxic paint (A2)	5.45	8.96	7.80	3.51	−2	5.51	8.35
	Maintaining the land's vitality and good condition in the process of design and construction (A3)	3.20	7.75	6.73	4.55	−2	6.55	5.84
	Incorporating the local heritage and landscape elements into design (A4)	3.57	8.96	6.18	5.39	0	5.39	6.26
	Beautification and uniqueness of the interior design (A5)	3.65	9.36	7.26	5.71	−1	6.71	8.20
	Greenization and uniqueness of the garden design (A6)	4.17	9.15	7.26	4.98	−1	5.98	8.19
	Room themes and features (A7)	3.95	9.36	7.26	5.42	0	5.42	6.66
	Homestay features (A8)	4.22	9.15	6.73	4.92	1	3.92	6.68
	Overall ambience forming (A9)	3.68	8.72	7.36	5.04	0	5.04	6.20
Service quality (B)	Service attitude (B1)	4.04	9.15	6.79	5.10	−2	7.10	8.32
	Pick-up service	1.89	7.63	4.82	5.75	3	2.75	4.76
	Information service (B2)	3.73	8.52	6.73	4.79	1	3.79	6.12
	Catering service and quality (B3)	3.52	8.16	6.65	4.65	−2	6.65	7.35
	Room tidiness (B4)	5.91	8.52	7.17	2.61	−3	5.61	7.81
	Room coziness (B5)	4.22	9.17	7.65	4.95	0	4.95	6.70
	Room privacy (B6)	5.43	9.31	7.67	3.89	−1	4.89	7.47
	Safety (B7)	5.91	9.79	8.75	3.88	−1	4.88	9.16
	Overall tidiness and hygiene (B8)	5.33	9.56	8.04	4.23	−2	6.23	8.50
Homestay facilities (C)	Cooking facilities	3.10	7.16	5.50	4.06	0	4.06	5.13
	Parking space (C1)	3.10	7.90	6.21	4.79	0	4.79	5.50
	Safety facilities (C2)	3.99	8.77	7.30	4.78	−1	5.78	8.13
	Medical aid	2.89	7.93	6.04	5.04	2	3.04	5.41
	Room settings (C3)	4.17	7.87	6.40	3.70	0	3.70	6.02
Homestay operation and management (D)	Overnight visitors (D1)	4.19	8.96	7.90	4.76	2	2.76	6.57
	Operating income (D2)	4.10	9.36	7.47	5.27	0	5.27	6.73
	Actual room nights rented (D3)	3.99	8.52	6.71	4.53	0	4.53	6.25
	Room occupancy rate (D4)	3.57	8.72	6.71	5.15	1	4.15	6.14
	Average room price (D5)	4.22	8.75	6.55	4.52	0	4.52	6.49
	Internet-based operation capability (D6)	4.85	9.36	7.71	4.51	0	4.51	7.11
Homestay geist and community co-prosperity (E)	Degree of interaction between hosts and lodgers (E1)	3.35	8.52	5.99	5.17	0	5.17	5.93
	Guiding services	2.86	7.63	4.44	4.77	2	2.77	5.25
	Arranging local experiential activities and food (E2)	2.99	7.93	6.58	4.94	1	3.94	5.46
	Contribution to living quality of local community (E3)	3.17	8.28	6.32	5.11	1	4.11	5.72
	Initiating preserving actions toward local resources (E4)	3.84	8.56	6.32	4.72	1	3.72	6.20
	Promoting and preserving local cultural resources (E5)	3.64	8.52	6.94	4.88	−1	5.88	7.26

By deleting the indicators of which the consensus value was less than the threshold value (5.433), including "Utilizing natural ventilation sufficiently", "Pick-up service", "Cooking facilities", "Medical aid", and "Guiding services", the evaluation framework of homestay business in this study was constructed with the remaining 31 factors.

4.2. Factors' Interrelationships

The objective of this stage was to clarify the interrelationship among the performance factors of the homestay industry. Therefore, a DEMATEL questionnaire was distributed to scholars and practitioners with homestay industry backgrounds through an internet platform. A total of 10 valid questionnaires were collected. Given that the evaluation scale of influence degree between the criteria was a sequential scale, the arithmetic mean of the pairwise comparison between the criteria could be used to express the consensus degree of the experts to obtain the evaluation consistency. The self-correlation part of the criteria in the direct influence matrix was 0, and the rest were between 0–4.

Under the causality diagram method, the centrality degree and cause degree of each factor were aggregated, with further analysis results presented in Table 5.

Table 5. Centrality degree and cause degree of each aspect and criteria.

Aspect	Criterion	b	r	b + r	b − r	Influence Ranking
A		0.39	0.27	0.66	0.12	1
	A1	2.06	0.00	2.056	2.056	2
	A2	2.01	0.00	2.015	2.015	3
	A3	1.92	0.00	1.916	1.916	4
	A4	3.31	0.00	3.307	3.307	1
	A5	2.72	2.41	5.136	0.311	5
	A6	1.98	3.01	4.989	−1.022	6
	A7	3.29	5.79	9.078	−2.500	7
	A8	3.30	6.34	9.642	−3.036	8
	A9	3.27	6.32	9.591	−3.046	9
B		0.28	0.31	0.59	−0.03	3
	B1	3.71	1.18	4.887	2.525	2
	B2	4.28	0.00	4.276	4.276	1
	B3	1.79	1.76	3.547	0.037	3
	B4	1.79	1.79	3.584	0.002	5
	B5	0.59	4.23	4.817	−3.641	8
	B6	1.81	2.43	4.238	−0.625	6
	B7	2.40	4.99	7.386	−2.588	7
	B8	4.27	4.26	8.525	0.013	4
C		0.15	0.24	0.39	−0.09	4
	C1	1.08	0.54	1.620	0.540	1
	C2	0.57	1.14	1.703	−0.569	3
	C3	1.71	1.68	3.396	0.029	2
D		0.36	0.31	0.67	0.05	2
	D1	2.50	1.79	4.286	0.714	2
	D2	3.02	3.75	6.776	−0.731	5
	D3	2.44	1.81	4.247	0.632	3
	D4	1.24	2.44	3.677	−1.199	6
	D5	3.08	3.69	6.771	−0.604	4
	D6	1.19	0.00	1.188	1.188	1
E		0.15	0.34	0.49	−0.19	5
	E1	1.72	2.98	4.702	−1.264	5
	E2	2.35	0.00	2.345	2.345	1
	E3	1.16	1.14	2.297	0.025	3
	E4	1.77	1.72	3.486	0.050	2
	E5	1.17	2.33	3.501	−1.156	4

As shown by the data in Table 5, from the aspect level, surroundings of the building and features (A) had the largest ($b - r$) value (0.12), followed by homestay operation and management (D) (0.05), service quality (B) (−0.03), homestay facilities (C) (−0.09), and homestay geist and community co-prosperity (E) (−0.19). Additionally, homestay operation and management (D) had the maximum value ($b + r$) (0.67), and surroundings of the building and features (A) (0.66) was in second, followed by service quality (B) (0.59), homestay geist and community co-prosperity (E) (0.49), and homestay facilities (C) (0.39). Therefore, surroundings of the building and features (A) was the most influential aspect, and homestay operation and management (D) was the most important aspect. From the criterion level, homestay features (A8), room themes and features (A7), and overall ambience forming (A9) occupied the top three positions in the criteria prominence of the A aspect. In the criteria relation, incorporating the local heritage and landscape elements into design (A4) was ranked first with 3.307, followed by utilizing plenty of natural light (A1) with 2.056 and using non-toxic paint (A2) with 2.015. In the B aspect, the order of criteria prominence was B8, B7, B1, B5, B2, B6, B4, and B3. The order of criteria relation was B2, B1, B3, B8, B4, B6, B7, and B5. In the C aspect, the order of criteria prominence was C3, C2, and C1. The order of criteria relation was C1, C3, and C2. In the D aspect, the order of criteria prominence was D2, D5, D1, D3, D4, and D6. The order of criteria relation was D6, D1, D3, D5, D2, and D4. In the E aspect, the order of criteria prominence was E1, E5, E4, E2, and E3. The order of criteria relation was E2, E4, E3, E5, and E1. Figure 2 shows that the impact–relationship map in the net format of the five aspects and criteria can be plotted.

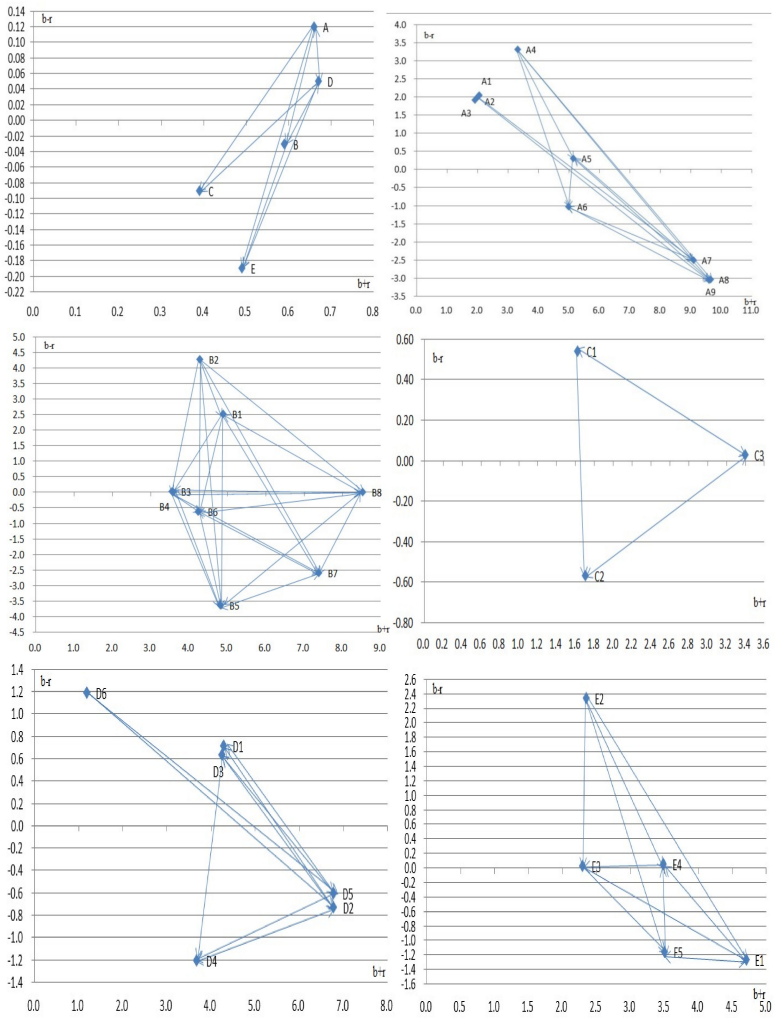

Figure 2. Impact–relation map in the net format of aspects and criteria.

Under the quadrant determination method, the centrality degree and cause degree of each factor are shown in Table 6.

Table 6. Centrality degree and cause degree of each criterion in the system.

Criterion	b	r	b + r	b − r
A1	12.97	0	12.97	12.97
A2	8.67	0	8.67	8.67
A3	3.11	0	3.11	3.11
A4	15.04	2.35	17.4	12.69
A5	15.06	5.35	20.41	9.71
A6	6.76	5.95	12.71	0.82
A7	15.69	18.88	34.57	−3.19
A8	15.8	21.28	37.08	−5.49
A9	15.6	21.21	36.82	−5.61
B1	13.17	6.54	19.71	6.63
B2	14.27	0	14.27	14.27
B3	4.94	4.69	9.64	0.25
B4	6.11	7.78	13.89	−1.66
B5	2.45	12.92	15.36	−10.47
B6	5.54	10.38	15.92	−4.84
B7	8.03	18.9	26.93	−10.87
B8	14.91	15.39	30.3	−0.48
C1	1.24	0	1.24	1.24
C2	3.68	10.33	14.01	−6.66
C3	9.35	12.28	21.63	−2.94
D1	12.56	8.35	20.92	4.21
D2	14.21	16.71	30.92	−2.5
D3	11.74	7.77	19.5	3.97
D4	9.27	9.12	18.38	0.15
D5	15.01	15.32	30.33	−0.31
D6	4.92	0	4.92	4.92
E1	5.51	17.49	23	−11.97
E2	6.13	7.13	13.26	−1.01
E3	3.06	7.17	10.23	−4.1
E4	5.54	8.49	14.03	−2.95
E5	3.72	12.27	15.99	−8.56

According to Table 6, in the performance evaluation system, the core elements included beautification and uniqueness of the interior design (A5), service attitude (B1), overnight visitors (D1), actual room nights rented (D3), and room occupancy rate (D4), which are in quadrant I. The driving elements were utilizing plenty of natural light (A1), using non-toxic paint (A2), maintaining the land's vitality and good condition in the process of design and construction (A3), incorporating the local heritage and landscape elements into design (A4), greenization and uniqueness of the garden design (A6), information service (B2), catering service and quality (B3), parking space (C1), and internet operation capability (D6), which are in quadrant II.

Room tidiness (B4), room coziness (B5), room privacy (B6), safety facilities (C2), arrangement of local experience activities and food (E2), contribution to the living quality of the local community (E3), initiating preserving actions toward local resources (E4), and promoting and preserving local cultural resources (E5) constituted independent elements, which are classified in quadrant III. Room themes and features (A7), homestay features (A8), overall ambience forming (A9), safety (B7), overall tidiness and hygiene (B8), room settings (C3), operating income (D2), average room price (D5), and degree of interaction between hosts and lodgers (E1) are grouped in quadrant IV, which are named as the affected elements. As shown in Figure 3, each criterion was plotted into different quadrants.

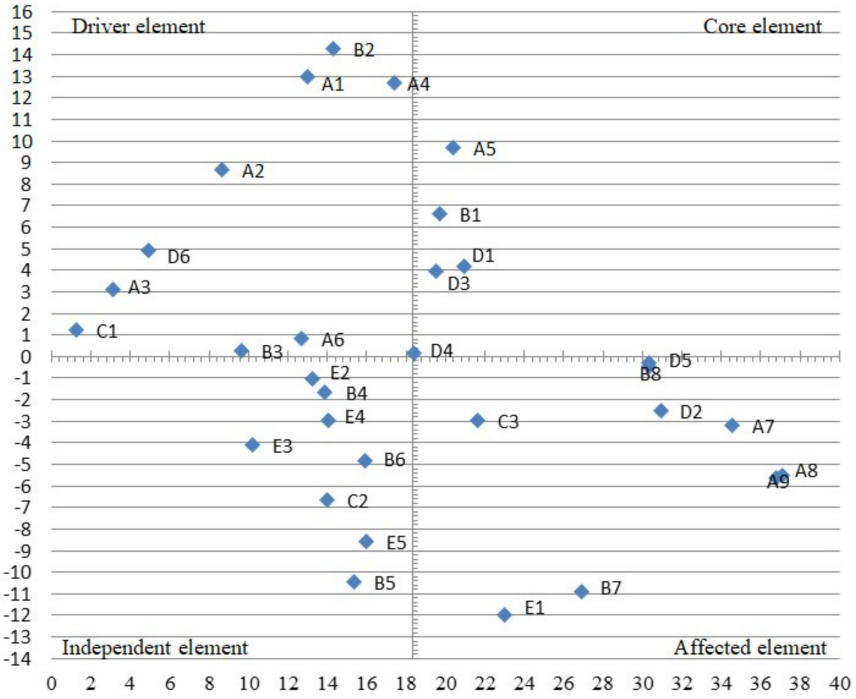

Figure 3. Quadrant function diagram of criteria.

4.3. Factors' Weights

Based on the total influential matrix from DEMATEL, we can not only obtain the influential degrees among criteria (T_C) and aspects (T_A), but also construct the weighted super-matrix by multiplying the normalized T_C and T_A. Ultimately, we can obtain different weights of each aspect and criterion, as listed in Table 7.

Table 7. Weight of each aspect and criterion.

Aspect	Global Weight	Ranking	Criterion	Local Weight	Ranking	Global Weight	Ranking
A	0.2004	3	A1	0.0976	8	0.0196	30
			A2	0.1030	7	0.0206	29
			A3	0.0968	9	0.0194	31
			A4	0.1057	6	0.0212	28
			A5	0.1078	5	0.0216	27
			A6	0.1081	4	0.0217	26
			A7	0.1196	3	0.0240	24
			A8	0.1309	1	0.0262	16
			A9	0.1305	2	0.0261	17
B	0.2011	2	B1	0.1219	6	0.0245	22
			B2	0.1172	8	0.0236	25
			B3	0.1193	7	0.0240	23
			B4	0.1224	5	0.0246	21
			B5	0.1284	3	0.0258	19
			B6	0.1262	4	0.0254	20
			B7	0.1347	1	0.0271	15
			B8	0.1298	2	0.0261	18
C	0.1962	5	C1	0.3116	3	0.0611	3
			C2	0.3413	2	0.0670	2
			C3	0.3472	1	0.0681	1
D	0.1997	4	D1	0.1644	4	0.0328	12
			D2	0.1756	1	0.0351	9
			D3	0.1641	5	0.0328	13
			D4	0.1678	3	0.0335	11
			D5	0.1732	2	0.0346	10
			D6	0.1550	6	0.0310	14
E	0.2025	1	E1	0.2105	1	0.0426	4
			E2	0.1931	5	0.0391	8
			E3	0.1948	4	0.0394	7
			E4	0.1985	3	0.0402	6
			E5	0.2031	2	0.0411	5

The global weights of the five aspects in ranking order were: homestay geist and community co-prosperity (E; 0.2025), service quality (B; 0.2011), surroundings of the building and features (A; 0.2004), homestay operation and management (D; 0.1997), and homestay facilities (C; 0.1962). The overall ranking of criteria was synthesized by the global weights presented in Table 7. Room settings (C3), safety facilities (C2), parking space (C1), degree of interaction between hosts and lodgers (E1), promoting and preserving local cultural resources (E5), and initiating preserving actions toward local resources (E4) were the top six elements, respectively, corresponding to high global weights of 0.0681, 0.0670, 0.0611, 0.0426, 0.0411, and 0.0420. The weights of the criteria under the aspects of homestay facilities, homestay geist and community co-prosperity, and homestay operation and management occupied more advanced positions. In other words, the criteria weights under aspect C took the top three. These were followed by aspect E, whose criteria weights ranked 4–8; the criteria weights under aspect D ranked 9–14. Therefore, a clustering phenomenon was formed.

5. Discussion

The study disclosed the interrelationships of factors affecting the sustainable development of homestays using FDM, DEMATEL, and DANP to filter the performance factors, plot the interrelationships, and assess the crucial factors under the Chinese context. In view of the corresponding results, the research questions were effectively answered.

After appropriate adjustment of the relevant performance framework and the analysis of expert opinions through FDM, 31 indicators reshaped the evaluation system of homestay business under the Chinese context. From the perspective of performance evaluation, the system, which includes financial and non-financial criteria, can more comprehensively and accurately evaluate the performance of homestay business in China.

The findings showed internal interrelationships of aspects in Figure 2. Surroundings of the building and features (A) and homestay operation and management (D) were the causal aspects affecting service quality (B), homestay geist and community co-prosperity (E), and homestay facilities (C). The surrounding environment and characteristics of the building (A) was not only the distinctive features of homestays in the accommodation industry but also the typical features that distinguish them from other accommodation formats, which need to be strengthened. The operation and management of homestays (D) further highlighted a homestay's business nature. Constrained by their characteristics, such as small size and non-normalization of service, homestays should focus more on homestay facilities, service quality, and integration of internal and external elements to promote sustainable development.

With respect to criterion-level analysis, criteria causal diagrams in Figure 2 show that A4, A1, A2, A3, A5, B2, B1, B3, B8, B4, C1, C3, D6, D1, D3, E2, E4, and E3 become dispatching factors with positive affected values under their respective aspects. Thus, the remainder became master receivers under their respective aspects because of the negative affected value. Therefore, special attention should be paid to the 18 dispatching criteria with their respective influence on the others.

The centrality and cause degrees presented in Table 6 above were also calculated to plot the total relation map at the criterion level into four quadrants. In Figure 3, as the core elements, beautification and uniqueness of the interior design (A5), service attitude (B1), overnight visitors (D1), actual room night rented (D3), and room occupancy rate (D4) were grouped in quadrant I. These elements should become business focuses of practitioners because of their strong relationships with and high degrees of influence on other criteria. Further, the features of the elements suggest a consensus of effectiveness-oriented operation. In quadrant II, utilizing plenty of natural light (A1), using non-toxic paint (A2), maintaining the land's vitality and good condition in the process of design and construction (A3), incorporating the local heritage and landscape elements into design (A4), greenization and uniqueness of the garden design (A6), information service (B2), catering service and quality (B3), parking space (C1), and internet operation capability (D6) constituted the driving

elements. They were explained as the source of appealing consumers to some content, which emphasizes more the product features of homestay business.

As independent elements clustered in quadrant III, room tidiness (B4), room coziness (B5), room privacy (B6), safety facilities (C2), arrangement of local experience activities and food (E2), contribution to the living quality of the local community (E3), initiating preserving actions toward local resources (E4), and promoting and preserving local cultural resources (E5) need their control to be strengthened because of less interaction with the other elements. Therefore, the integration of internal product features and external resources is essential. Finally, the affected elements in quadrant IV should also be considered. To some extent, the affected factors enrich the content of homestay business criteria and make the aspects more specific and in-depth.

With respect to the overall weight ranking of criteria and aspects, homestay geist and community co-prosperity (E; 0.2025) and service quality (B; 0.2011) were top ranked, and homestay facilities (C; 0.1962) ranked last. This result shows that in contrast to the hard facilities, internal and external sources that support the sustainable development of homestays have already attracted much more focus. With high global weight, A8, A9, and A7 clustered under aspect A were among the top-ranking criteria. Similarly, within aspect B, B7, B8, and B5 had the top priority with high global weight. Thus, at present, practitioners should focus on the homestay features and major products, namely, room.

As key financial criteria in the accommodation industry, D2, D5, and D4 in aspect D also obtained higher weights. These criteria usually represent the daily operational efficiency of a homestay from a financial perspective. Therefore, these criteria to enhance operational efficiency should not be ignored in the daily operation of a homestay business by practitioners. In aspect E, E1, E5, and E4 should be prioritized and implemented by practitioners because they are the sources of sustainable development momentum of a homestay business.

Given the empirical findings, compared to the cause relationship from IRM of the criteria, the quadrant function diagram further refined the function of each criterion from a systemic and holistic angle. Furthermore, as the affected elements, there is a higher overlap between the criteria classified by the two methods. Simultaneously, the criteria clustered into the effect group of different aspects are nearly identical to the criteria with higher global weight, such as A7, A8, A9, B5, B7, C2, D2, D4, D5, E1, and E5. More than this, at the aspect level, surroundings of the building and features (A) and homestay operation and management (D) are the causal aspects affecting service quality (B), homestay geist and community co-prosperity (E), and homestay facilities (C). In terms of aspect weight, it is just the opposite: service quality (B) and homestay geist and community co-prosperity (E) rank as the top two. Moreover, this reaches a consensus with the research results of [31] to a great extent. To sum up, aspects and criteria in the effect group have high global weights in the framework. In other words, the combination of different methods can more effectively identify the crucial factors of homestay business.

The theoretical contributions of this study are manifold. First, it systematically constructs an evaluation system of homestay business for a performance perspective in China. Few have constructed evaluation frameworks from perspectives of the entire homestay business operation [31], especially financial and non-financial factors in the evaluation framework. Consequently, it not only serves as the reference of industry administration for local authorities, but also lays an essential foundation for in-depth study of homestay business. Second, the study helps to shift the research direction and expand the research topics of homestay business. Currently, the homestay industry, rural tourism, homestay facilities, homestay management, and the homestay economy constitute the hot spots of homestay research in China [71], but the effectiveness study of homestay business is still an area that remains under researched. Meanwhile, along with entering the stage of rational operation guided by tourists in the homestay business in China, consumer behaviors and routine operation should be the next research focus. Therefore, this study serves as a stepping stone for subsequent research of homestays. Last but not least, the sustainability strategy of home-

stays backs up sustainability theory. Regarding the study results, rooms as a core product of homestays, interaction of hosts and lodgers, and integration utilization and preserving of surrounding resources inject impetus into the sustainability of homestay business. Thus, these become essential components of the sustainability strategy in homestay business. Meanwhile, homestays can reach threefold sustainable community-based tourism goals of environmental, cultural, and local employment protection [72]. Integration utilization and preserving of surrounding resources indicates that homestay and environmental, economic, and social resources coexist harmoniously. Conversely, if any one of the utilization and preserving of surrounding resources is neglected, a homestay business cannot last for a long time. Therefore, this backs up sustainability theory.

6. Conclusions

The present study clarifies the interrelationships among the performance factors of homestays by combining FDM, DEMATEL, and DANP in the Chinese context. Specifically, FDM helped to build the evaluation framework of homestay business which comprises 5 aspects and 31 criteria. Subsequently, the interrelationships among aspects and criteria were identified by DEMATEL and DANP from different perspectives. The study finds that aspects and criteria in the effect group have top-ranked weights, and from the aspect level, service quality (B) and homestay geist and community co-prosperity (E) should be the focus of homestay development in the new stage in China.

The study has significant implications for practitioners of homestays. First, as the core product of a homestay, rooms should be continuously focused on not only from the perspective of product design in the early days but also from the perspective of sustainability in the future. The weakening of the weight of building factors implies that the features of rooms regarding the hardware and facilities cannot last [31], because hardware and facilities are readily available in China, and the features of hardware and facilities are easily imitated in reality. Therefore, service quality, including coziness, tidiness, hygiene, privacy, and safety, etc., endows the lasting features of rooms and sustainably underpins a homestay business. Next, focusing on orientation of financial criteria is necessary. Financial criteria are direct outcomes of a homestay business from a managerial perspective. More importantly, many hosts in China, especially who are local residents, long regard homestay business as a sideline, and this naturally generates the ambiguity of homestay business. Thus, financial criteria in homestay business are not taken into account seriously. Finally, the integrated utilization of internal and external elements, including the interaction of hosts and lodgers and socio-cultural resources, is the source of sustainability of a homestay business. Compared with hotels, homestays usually have fewer product types and internal resources due to their small-scale community-run operation [20]. However, the attractiveness of homestays has always been the authenticity of local life [73,74], even including homestay operation and management, homestay geist and community co-prosperity, surroundings of the buildings and features, and homestay facilities [37]. Consequently, through link and utilization of various resources, homestays can ensure economic, social, and cultural benefits for local communities as well as sustainable development [75].

The study has some limitations. First, its investigation scope mainly clustered in Zhejiang Province. Thus, future research may consider different samples from different areas to improve the robustness of the current conclusions and clarify the generalization of the study. Second, although the consensus of experts' opinions worked well in the study, further researchers may employ the methods of expert appraisal, such as merging fuzzy theory into DANP to enhance the accuracy. Third, future research may further deepen the relevant discussion.

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References

1. Benur, A.M.; Bramwell, B. Tourism product development and product diversification in destinations. *Tour. Manag.* **2015**, *50*, 213–224. [CrossRef]
2. Goodwin, H.; Santilli, R. *Community-Based Tourism: A Success?* Working Paper; The International Centre for Responsible Tourism, Leeds Metropolitan University: Leeds, UK, 2009; pp. 24–27. Available online: http://www.andamandiscoveries.com/press/press-harold-goodwin.pdf (accessed on 13 June 2022).
3. Bachok, S.; Hasbullah, H.; Ab Rahman, S.A. Homestay operation under the purview of the ministry of tourism and culture of Malaysia: The case of Kelantan Homestay Operators Planning Malaysia. *J. Malays. Inst. Plan.* **2018**, *16*, 175–185. Available online: https://www.planningmalaysia.org/index.php/pmj/article/view/472/382 (accessed on 13 June 2022).
4. Haywood, L.K.; Nortje, K.; Dafuleya, G.; Nethengwe, T.; Sumbana, F. An assessment for enhancing sustainability in rural tourism products in South Africa. *Dev. S. Afr.* **2020**, *37*, 1033–1050. [CrossRef]
5. Walter, P.; Regmi, K.D.; Khanal, P.R. Host learning in community-based ecotourism in Nepal: The case of Sirubari and Ghalegaun Homestays. *Tour. Manag. Perspect.* **2018**, *26*, 49–58. [CrossRef]
6. Okazaki, E. A community-based tourism model: Its conception and use. *J. Sustain. Tour.* **2008**, *16*, 511–529. Available online: https://www.tandfonline.com/doi/abs/10.1080/09669580802159594 (accessed on 13 June 2022). [CrossRef]
7. Pitanatri, P.D.S.; Pitana, I.G. Challenging the giants: Factors contributing to local homestay competitiveness in Ubud Bali. *J. Soc. Sci. Res.* **2019**, *5*, 796–802. [CrossRef]
8. Janjua, Z.A.; Krishnapillai, G.; Rahman, M. A systematic literature review of rural homestays and sustainability in tourism. *SAGE Open* **2021**, *11*, 1–17. [CrossRef]
9. Long, F.; Liu, J.M.; Zhang, S.Y.; Yu, H.; Jiang, H. Development characteristics and evolution mechanism of homestay agglomeration in mogan mountain, China. *Sustainability* **2018**, *10*, 2964. [CrossRef]
10. Chen, H.T.; Chen, K.S.; Tseng, H.P.; Chang, W.F. Usage behavior causal model construction for B & B-owned websites—from the B & B owner/operator perspective. *J. Qual. Assur. Hosp. Tour.* **2014**, *15*, 399–424. [CrossRef]
11. Xia, B.; Dong, S.; Ba, D.; Li, Y.; Li, F.; Liu, H.; Li, Z.; Zhao, M. Research on the spatial differentiation and driving factors of tourism enterprises' efficiency: Chinese scenic spots, travel agencies, and hotels. *Sustainability* **2018**, *10*, 901. [CrossRef]
12. Gunasekaran, N.; Anandkumar, V. Factors of influence in choosing alternative accommodation: A study with reference to pondicherry, a coastal heritage town. *Procedia Soc. Behav. Sci.* **2012**, *62*, 1127–1132. [CrossRef]
13. Kunjuraman, V.; Hussin, R. Challenges of community-based homestay programme in Sabah, Malaysia: Hopeful or hopeless? *Tour. Manag. Perspect.* **2017**, *21*, 1–9. [CrossRef]
14. Yu, Y.; Han, Q.; Tang, W.; Yuan, Y.; Tong, Y. Exploration of the industrial spatial linkages in urban agglomerations: A case of urban agglomeration in the middle reaches of the Yangtze River, China. *Sustainability* **2018**, *10*, 1469. [CrossRef]
15. Razzaq, A.R.A.; Hadi, M.Y.; Mustafa, M.Z.; Hamzah, A.; Khalifah, Z.; Mohamad, N.H. Local community participation in homestay program development in Malaysia. *J. Mod. Account. Audit.* **2011**, *7*, 1418–1429. Available online: https://www.academia.edu/3068698/Local_community_participation_in_homestay_program_development_in_Malaysia (accessed on 13 June 2022).
16. Pusiran, A.K.; Xiao, H.G. Challenges and community development: A case study of homestay in Malaysia. *Asian Soc. Sci.* **2013**, *9*, 1–17. [CrossRef]
17. Acharya, B.P.; Halpenny, E.A. Homestays as an alternative tourism product for sustainable community development: A case study of women-managed tourism product in rural Nepal. *Tour. Plan. Dev.* **2013**, *10*, 367–387. [CrossRef]
18. Brush, C.G.; Vanderwerf, P.A. A comparison of methods and sources for obtaining estimates of new venture performance. *J. Bus. Ventur.* **1992**, *7*, 157–170. [CrossRef]
19. Simpson, M.; Padmore, J.; Newman, N. Towards a new model of success and performance in SMEs. *Int. J. Entrep. Behav. Res.* **2012**, *18*, 264–285. [CrossRef]
20. Kayat, K.; Zainuddin, N.F.A. Community-based tourism initiative in rural Malaysia: Is it a success? *Int. Rev. Manag. Mark.* **2016**, *6*, 242–249. Available online: https://econjournals.com/index.php/irmm/article/view/3262 (accessed on 13 June 2022).
21. Kamboj, S.; Rahman, Z. Marketing capabilities and firm performance: Literature review and future research agenda. *Int. J. Product. Perform. Manag.* **2015**, *64*, 1041–1067. [CrossRef]

22. Ibrahim, Y.; Razzaq, A.R.A. Homestay programme and rural community development in Malaysia. *J. Ritsumeikan Soc. Sci. Humanit.* **2010**, *2*, 7–24. Available online: http://www.ritsumei.ac.jp/acd/re/k-rsc/hss/book/pdf/vol02_03.pdf (accessed on 13 June 2022).
23. Ramele, R.; Yamazaki Juchi, M.N.I.; Isnin, Z.; Safiee, L.S. The evolution of homestay tourism in Malaysia. *Pertanika J. Soc. Sci. Humanit.* **2017**, *25*, 301–306. Available online: https://www.researchgate.net/publication/361206899_The_Evolution_of_Homestay_Tourism_in_Malaysia (accessed on 13 June 2022).
24. Zulkefli, N.S.; Aziz, R.C.; Radzol, A.R.M. Developing a framework on success performance of community-based homestay tourism programme: Evidence from insider of homestay. *J. Tour. Hosp. Culin. Arts* **2021**, *13*, 256–270. [CrossRef]
25. Basak, D.; Bose, A.; Roy, S.; Chowdhury, I.R.; Sarkar, B.C. Understanding sustainable homestay tourism as a driving factor of tourist's satisfaction through structural equation modeling: A case of Darjeeling Himalayan region, India. *Curr. Res. Environ. Sustain.* **2021**, *3*, 100098. [CrossRef]
26. Bhalla, P.; Bhattacharya, P. Visitors' satisfaction from ecotourism in the protected area of the Indian Himalayan Region using importance–performance analysis. *J. Glob. Sch. Market. Sci.* **2019**, *29*, 162–179. [CrossRef]
27. Purbasari, N.; Manaf, A. Comparative study on the characteristics of community based tourism between Pentingsari and Nglanggeran tourism village, Special Region Yogyakarta. *E3S Web Conf.* **2018**, *31*, 09007. [CrossRef]
28. Daud, S.M.; Ramli, R.; Kasim, M.M.; Kayat, K.; Razak, R.A. The use of arithmetic average method in identifying critical success criteria for Homestay Programmes. In Proceedings of the 2nd Innovation and Analytics Conference & Exhibition IACE, Kedah, Malaysia, 29 September–1 October 2015; pp. 050006-1–050006-9. [CrossRef]
29. Thanvisitthpon, N. Statistically validated component- and indicator-level requirements for sustainable thai homestay businesses. *Sustainability* **2021**, *13*, 936. [CrossRef]
30. Devadas, U.M.; Jayasooriya, S.S.W. Entrepreneurs' success in the small and medium scale homestay tourism business in Sri Lanka. *Int. J. Entrep.* **2021**, *25*, 1–17. Available online: http://repository.kln.ac.lk/handle/123456789/23804 (accessed on 13 June 2022).
31. Hu, Y.C.; Wang, J.H.; Wang, R.Y. Evaluating the performance of Taiwan homestay using analytic network process. *Math. Probl. Eng.* **2012**, *2012*, 827193. [CrossRef]
32. Phunnarong, S. Factors affecting the success of community-based tourism (CBT) in homestay form. *J. Community Dev. Res.* **2021**, *14*, 14–27. [CrossRef]
33. Yong, K.; Hassan, R.A. The relationships between social media marketing and entrepreneurial success: A conceptual study on homestay business in Sabah, Malaysia. *Rev. Integr. Bus. Econ. Res.* **2019**, *8*, 25–33. Available online: https://www.semanticscholar.org/paper/The-Relationships-Between-Social-Media-Marketing-A-Yong-Sabah/a0f7666ae41c9b0298542496a91ed3363b008c45 (accessed on 13 June 2022).
34. Yong, K. A conceptual framework of community participation and entrepreneurial success towards the homestay business in Sabah, Malaysia. *Acad. Entrep. J.* **2019**, *25*, 1–6. Available online: https://repofeb.undip.ac.id/id/eprint/173 (accessed on 13 June 2022).
35. Sawatsuk, B.; Darmawijaya, I.G.; Ratchusanti, S.; Phaokrueng, A. Factor determining the sustainable success of community-based tourism: Evidence of good corporate governance of Mae Kam Pong Homestay, Thailand. *Int. J. Bus. Econ. Aff.* **2018**, *3*, 13–20. [CrossRef]
36. Ismail, M.N.I.; Hanafiah, M.H.; Aminuddin, N.; Mustafa, N. Community-based homestay service quality, visitor satisfaction, and behavior intention. *Prodedia Soc. Behav. Sci.* **2016**, *222*, 398–405. [CrossRef]
37. Jin, S.T.T.; Ling, T.C.; Fern, Y.S. What are the attractiveness aspects that influence customer loyalty to homestays? A study in Taiwan. *J. Pengur.* **2016**, *48*, 201–218. Available online: http://ejournal.ukm.my/pengurusan/issue/view/883 (accessed on 13 June 2022).
38. Kayat, K.; Zainuddin, N.F.A.; Ramli, R.; Kasim, M.M. The perceived role of leadership and community support in the performance of community-based rural homestay programme in Malaysia. *Int. Rev. Manag. Mark.* **2016**, *6*, 145–149. Available online: https://www.econjournals.com/index.php/irmm/article/view/3222 (accessed on 13 June 2022).
39. Ramli, R.; Kasim, M.M.; Ramli, R.; Kayat, K.; Razak, R.A. Ranking the criteria for sustainability of community-based rural homestay programmes from the perspective of the operators. In Proceedings of the 2nd Innovation and Analytics Conference and Exhibition IACE, Kedah, Malaysia, 29 September–1 October 2015; pp. 030025-1–030025-6. [CrossRef]
40. Bhardwaj, A.; Joshi, M.; Khosla, R.; Dubash, N.K. More priorities, more problems? Decision-making with multiple energy, development and climate objectives. *Energy Res. Soc. Sci.* **2019**, *49*, 143–157. [CrossRef]
41. Siksnelyte-Butkiene, I.; Zavadskas, E.K.; Streimikiene, D. Multi-Criteria Decision-Making (MCDM) for the assessment of renewable energy technologies in a Household: A review. *Energies* **2020**, *13*, 1164. [CrossRef]
42. Zavadakas, E.K.; Turskis, Z.; Kildiene, S. State of art surveys of overviews on MCDM/MADM methods. *Technol. Econ. Dev. Econ.* **2014**, *20*, 165–179. [CrossRef]
43. Ishikawa, A.; Amagasa, T.; Tamizawa, G.; Totsuta, R.; Mieno, H. The max-min Delphi method and Fuzzy Delphi method via fuzzy integration. *Fuzzy Sets Syst.* **1993**, *55*, 241–253. [CrossRef]
44. Büyüközkan, G.; Güleryüz, S. An integrated DEMATEL-ANP approach for renewable energy resources selection in Turkey. *Int. J. Prod. Econ.* **2016**, *182*, 435–448. [CrossRef]
45. Gabus, A.; Fontela, E. *Perceptions of the World Problematique: Communication Procedure, Communicating with Those Bearing Collective Responsibility (DEMATEL Report No. 1)*; Battelle Geneva Research Centre: Geneva, Switzerland, 1973. Available online: https://www.scienceopen.com/document?vid=a0ebb8ee-a37b-420d-9b82-9ad21a81c9fc (accessed on 13 June 2022).

46. Saaty, T.L. *Decision Making with Dependence and Feedback: The Analytic Network Process*; RWS Publication: Pittsburgh, PA, USA, 2001; p. 203.
47. Hu, Y.C. Analytic Network Process for pattern classification problems using genetic algorithms. *Inf. Sci.* **2010**, *180*, 2528–2539. [CrossRef]
48. Xu, Z.; Wei, C. A consistency improving method in the Analytic Hierarchy Process. *Eur. J. Oper. Res.* **1999**, *116*, 443–449. [CrossRef]
49. Hu, Y.C.; Tsai, J.F. Backpropagation multi-layer perception for incomplete pairwise comparison matrices in Analytic Hierarchy Process. *Appl. Math. Comput.* **2006**, *180*, 53–62. [CrossRef]
50. Ou Yang, Y.P.; Shieh, H.M.; Leu, J.D.; Tzeng, G.H. A novel hybrid MCDM model combined with DEMATEL and ANP with applications. *Int. J. Oper. Res.* **2008**, *5*, 160–168. Available online: https://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.402.1382 (accessed on 13 June 2022).
51. Niemira, M.P.; Saaty, T.L. An Analytic Network Process model for financial-crisis forecasting. *Int. J. Forecast.* **2004**, *20*, 573–587. [CrossRef]
52. Wu, W.W. Choosing knowledge management strategies by using a combined ANP and DEMATEL approach. *Experts Syst. Appl.* **2008**, *35*, 828–835. [CrossRef]
53. Herat, A.T.; Noorossana, R.; Parsa, S.; Serkani, E.S. Using DEMATEL-Analytic Network Process (ANP) hybrid algorithm approach for selecting improvement projects of Iranian excellence model in healthcare. *Afr. J. Bus. Manag.* **2012**, *6*, 627–645. Available online: https://academicjournals.org/journal/AJBM/article-full-text-pdf/A85729D18298.pdf (accessed on 13 June 2022).
54. Chiu, W.Y.; Tzeng, G.H.; Li, H.L. A new hybrid MCDM model combining DANP with VIKOR to improve e-store business. *Knowl. Based Syst.* **2013**, *37*, 48–61. [CrossRef]
55. Hu, Y.C.; Chiu, Y.J.; Hsu, C.S.; Chang, Y.Y. Identifying key factors for introducing GPS-based fleet management systems to the logistics industry. *Math. Probl. Eng.* **2015**, *2015*, 413203. [CrossRef]
56. Klir, G.J.; Folger, T.A. *Fuzzy Sets, Uncertainty, and Information*; Prentice Hall: Hoboken, NJ, USA, 1988; p. 212. [CrossRef]
57. Kuo, Y.F.; Chen, P.C. Constructing performance appraisal indicators for mobility of the service industries using Fuzzy Delphi method. *Expert Syst. Appl.* **2008**, *35*, 1930–1939. [CrossRef]
58. Chen, X.Y.; Wang, J.X.; Zhang, X.F. A study on the key core resources and evaluation indicators for the development of off-site restaurants in sightseeing hotels. *Hosp. Sightsee.* **2017**, *14*, 223–249. [CrossRef]
59. Lin, C.L.; Tzeng, G.H. A value-created system of science (technology) park by using DEMATEL. *Expert Syst. Appl.* **2009**, *36*, 9683–9697. [CrossRef]
60. Wu, W.W.; Lee, Y.T. Developing global managers' competencies using the fuzzy DEMATEL method. *Expert Syst. Appl.* **2007**, *32*, 499–507. [CrossRef]
61. Patil, S.K.; Kant, R. Knowledge management adoption in supply chain: Identifying critical success factors using fuzzy DEMATEL approach. *J. Modeling Manag.* **2014**, *9*, 160–178. [CrossRef]
62. Wu, H.H.; Chang, S.Y. A case study of using DEMATEL method to identify critical factors in green supply chain management. *Appl. Math. Comput.* **2015**, *256*, 394–403. [CrossRef]
63. Lee, Y.C.; Li, M.L.; Yen, T.M. Analysis of adopting an integrated decision making trial and evaluation laboratory on a technology acceptance model. *Expert Syst. Appl.* **2010**, *37*, 1745–1754. [CrossRef]
64. Chuang, H.M.; Lin, C.K.; Chen, D.R.; Chen, Y.S. Evolving MCDM application using hybrid expert-based ISM and DEMATEL models: An example of sustainable ecotourism. *Sci. World J.* **2013**, *1*, 1653–1656. [CrossRef]
65. Wu, K.J.; Liao, C.J.; Tseng, M.L.; Chiu, A.S.F. Exploring decisive factors in green supply chain practice under uncertainty. *Int. J. Prod. Econ.* **2015**, *159*, 147–157. [CrossRef]
66. Tang, H.W.V.; Chang, K.; Yin, M.S.; Sheu, R.S. Critical factors for implementing a programme for international MICE professionals: A hybrid MCDM model combining DEMATEL and ANP. *Curr. Issues Tour.* **2017**, *20*, 1527–1550. [CrossRef]
67. Huang, J.J.; Tzeng, G.H.; Ong, C.S. Multidimensional data in multidimensional scaling using the analytic network process. *Pattern Recognit. Lett.* **2005**, *26*, 755–767. [CrossRef]
68. Lumpkin, G.T.; Dess, G.G. Clarifying the entrepreneurial orientation construct and linking it to performance. *Acad. Manag. Rev.* **1996**, *21*, 135–172. [CrossRef]
69. Fremont, A.; Shull, J.; Delbecg, A.L.; Curmings, L.L. *Organizational Decision Making*; McGraw-Hill: New York, NY, USA, 1970; p. 157.
70. Robbins, S.P. *Management*; Prentice Hall Inc.: Hoboken, NJ, USA, 1994; p. 173.
71. Feng, X.B.; Han, W.Q. Analysis of knowledge map of domestic homestay industry development research. *Tour. Res.* **2020**, *12*, 49–60. [CrossRef]
72. Reimer, J.K.K.; Walter, P. How do you know it when you see it? Community-based ecotourism in the Cardamom Mountains of southwestern Cambodia. *Tour. Manag.* **2013**, *34*, 122–132. [CrossRef]
73. Karki, K.; Chhetri, B.B.K.; Chaudhary, B.; Khanal, G. Assessment of socio-economic and environmental outcomes of the homestay program at Amaltari village of Nawalparasi, Nepal. *J. Nat. Resour. Manag.* **2019**, *1*, 77–87. [CrossRef]
74. Sen, V.; Walter, P. Community-based ecotourism and the transformative learning of homestay hosts in Cambodia. *Tour. Recreat. Res.* **2020**, *45*, 323–336. [CrossRef]
75. Chaiyatorn, S.; Kaoses, P.; Thitphat, P. The developmental model of cultural tourism—Homestay of the Lao Vieng and Lao Song ethnic groups in the central region of Thailand. *J. Soc. Sci.* **2010**, *6*, 130–132. [CrossRef]