

Study on the Quality Classification and Evaluation of Star Farmhouse in Chengdu, China Based on Factor Cluster Analysis

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Abstract: Chengdu is the birthplace of Chinese agritainment, which has become an important part of rural tourism development. Based on the field survey data of 204 star rated farmhouses in Chengdu, this paper uses factor analysis and cluster analysis to evaluate the quality status of star rated farmhouse entertainment in 19 districts, cities and counties of Chengdu by using factor analysis and cluster analysis. The evaluation results are: the overall quality is good. According to the quality related main factors, it can be divided into three types: basic type, normative type and comprehensive type, and most regions present multi type mixed pattern. Among them, the typical of basic type is concentrated in Pujiang County, the typical of normative type is concentrated in Dujiangyan City, and the typical of comprehensive star level is concentrated in Pidu district.

1. Introduction

In 1987, China's first farmhouse "Xujia courtyard" was born in Nongke village of Chengdu. After more than ten years of development, Chengdu promulgated two local standards in 2004, namely, the basic conditions for the opening of farmhouse entertainment and the classification of service quality of farmhouse tourism, and implemented the star classification and evaluation of farmhouse entertainment. The rating level is five-star, four-star, three-star, two-star and one-star. As an important form of rural tourism, farmhouse entertainment is the main carrier of Rural Revitalization. Nowadays, scholars' research on star rated agritainment mainly focuses on the management system and regional distribution structure of star rated farmhouse, while there are few related researches in Chengdu. According to the latest survey data, the paper finds out the quality status of star rated farmhouse in Chengdu, and finds out the strategies to promote the transformation and upgrading development of star rated farmhouse. [1]

2. Investigation Methods and Data Collection

2.1 Survey Method

This field survey is based on "Sichuan Province Farmhouse (Village Hotel) Tourism Service Quality Classification and Evaluation", "Sichuan Province Farmhouse (Village Hotel) Tourism Service Quality Rating Evaluation Rules", "Sichuan Province Farmhouse Tourism Service Quality Rating Classification and Evaluation Standards" (Revision)", "Chengdu Farmhouse Management Measures", "Chengdu Farmhouse Management Implementation Rules" and other relevant standards and normative design questionnaires, based on the Chengdu University of Information Technology, an expert group was set up as a consumer from 2019 A 45-day field investigation was conducted from June to July.

2.2 Data Collection

There are three main steps :(1) Collect relevant data before inspection. According to the star farmhouse entertainment which will be investigated on the next day, relevant information is collected through network inquiry, and the following main contents are evaluated based on the field survey: network application, network marketing, network promotion and awards and honors.[2] (2) As

consumers, the expert group obtained a large number of first-hand inspection materials by means of observation, investigation, inquiry, conversation and photo taking, which objectively and comprehensively reflected the general situation of the operation and service quality of star rated farmhouse entertainment in Chengdu.(3) Organize the field survey data and compile the survey score table.

3. Analysis Methods and Indicator Framework

3.1 Analysis Method

Based on the Chengdu star farmhouse data obtained from the field survey, SPSS software was used to standardize the relevant data for factor analysis, sort them according to their results, and finally perform cluster analysis.

3.2 Indicator Framework

Because the indicators of the survey scoresheet are complicated and relatively fragmented, this article merges them on the basis of professional understanding to form a new indicator framework to judge the status quo of star farmhouse quality. The surrounding environment indicators mainly judge the surrounding environment of star farmhouses. The reception facilities index mainly evaluates the hardware facilities of the kitchen, dining room, bathroom and guest rooms. Theme features mainly include theme display and feature management. The service quality indicators are evaluated from the aspects of service standardization (food and kitchen based) and the attitude of employees. Safety management indicators include system measures related to the safety of operating facilities and the safety of farmhouses. Management performance indicators mainly include the industry and the unit, including whether the farmhouse industry has formed a brand, whether it has participated in industry organizations, whether the farmhouse units have operated in good faith, and obtained other honorary titles related to tourism.[3]

4. Analysis and Evaluation of the Quality Status of Star-Rated Farmhouses in Chengdu

There are 266 star-rated farmhouses in Chengdu, of which 37 are closed and 25 are closed. The effective sample size of this survey is 204, including 146 star-level farmhouses that provide accommodation services and 58 star-level farmhouses that do not provide accommodation services. Only one one-star farmhouse in Chengdu is out of business, so the stars involved in this survey range from two to five stars. It is distributed in 19 districts (cities and counties) in Pujiang County, among which there are 38 two-star farmhouses, 96 three-star farmhouses, 55 four-star farmhouses and 15 five-star farmhouses. The top three districts (cities, counties) with the most star-rated farmhouses are Pujiang County, Dujiangyan City, and Pidu District.

At first, the development of farmhouses was only to “eat farmhouse meals”, and then gradually developed accommodation services. In order to ensure that the analysis results are more accurate, this article refers to star farmhouses that do not provide accommodation services as non-accommodation star farmhouses, and star farmhouses that provide accommodation services are called accommodation star farmhouses. From non-accommodation and accommodation stars Analysis of two levels of farmhouse.

4.1 Non Accommodation-Type Star Farmhouse Factor-Cluster Analysis

4.1.1 Factor Analysis of Non-Accommodation Star Farmhouse

Use SPSS software to get the running result of factor analysis. Since the safety management is less than 0.4 in the load of the rotating component matrix, the factor analysis using the indicator of safety management is eliminated. The results are shown in Table 2. The KMO value is 0.668, and the significance level of Bartlett’s spherical test is 0. , And the analysis results between the two indicate that this data is suitable for factor analysis.

According to the analysis results, four principal components are obtained, and their eigenvalues

are all greater than 1, respectively 2.527, 1.306, 1.094, 1.027, and the cumulative contribution rate is 66.155%. It shows that only four principal components need to be extracted in this study to reflect the situation of star-level farmhouses at all levels.[4]

In factor analysis, Kaiser standardized orthogonal rotation method is used, and the rotation converges after 5 iterations to obtain the rotation component matrix. The first factor has a higher load on the standardization of kitchens, toilets and services, the second factor has a higher load on theme characteristics, industries and units, and the third factor has a higher load on restaurants and surrounding environments. The main load of the fourth factor is reflected in the attitude of practitioners.

Through the extraction of the above four common factors, the correlation between the common factor variables is small, and there is no problem of information redundancy. Therefore, combining the professional knowledge, the various factors are named as follows:

Factor 1 (F1): Infrastructure management factor. The factor includes the reception facilities dominated by kitchens and toilets, as well as the standardized service indicators dominated by restaurants and kitchens. It mainly reflects the food processing, preservation, sample retention and mosquito prevention facilities of the farmhouse kitchen, the cleanliness and quantity of toilets, the disposal of manure, the standardized services of restaurants and kitchens, whether the employees are neatly dressed and participating in relevant training. The management of the infrastructure of star farmhouses is an important basic condition for the development of farmhouses, so it is named the infrastructure management factor.

Factor 2 (F2): characteristic management factor. The factor includes two themes of star farmhouse theme characteristics and management performance. It mainly reflects whether the theme of management is distinctive, whether it contains at least one of the nine characteristic formats of rural tourism, whether it actively participates in industry organizations, whether the unit is marketing in multiple ways, operating in good faith, and obtaining related industry honors. Therefore, it is named as characteristic management factor.

Factor 3 (F3): Operating environment factor. The factor includes two indicators: surrounding environment and restaurant. It mainly reflects the surroundings and restaurant environment of the star-shaped farmhouse. From the surrounding environment, architectural style and dining environment of the restaurant, it can show the main part of the operating environment of the non-accommodation star farmhouse, so it is named the operating environment factor.

Factor 4 (F4): Service quality management factor. This factor mainly reflects the service attitude of employees. Whether the employees have a good service attitude can reflect the service quality management level of the star farmhouse to a certain extent, so it is named as the service quality management factor.

The factor score can be used to judge the performance of star farmhouse on this factor. The factor scores of the SPSS analysis results are further sorted out, and according to the level of the factor scores, the average top five rankings of each factor score of each district, city and county in Chengdu and the distribution of star-level farmhouses are sorted out. In F1 (infrastructure management), it is mainly based on three-star farmhouses, and Shuangliu District, Xindu District, Pengzhou City, Jianyang City and Jinjiang District rank top and perform best. In F2 (characteristic management), it is dominated by three-star and four-star farmhouses. Jinjiang District, Shuangliu District, Dujiangyan City, Xindu District, and Piddu District rank top and perform best. In F3 (operating environment), three-star and four-star farmhouses are dominant, and Dayi County, Xinjin County, Xindu District, Longquanyi District, and Jinjiang District rank top and perform best. In F4 (service quality management), it is mainly based on three-star and four-star farmhouses. Jinjiang District, Shuangliu District, Wenjiang District, Xinjin County, and Chongzhou City rank top and perform best.

4.1.2 Cluster Analysis of Non-Accommodation Star Farmhouses

Based on the four factors obtained by factor analysis, k-means cluster analysis was performed to obtain the following results.

There are three types of non-accommodation star farmhouses. This article analyzes the areas and star ratings of each type of farmhouse as follows: The first category is normative. This type of farmhouse belongs to the mid-level form of star-level farmhouse development. The operating environment has improved greatly, realizing the importance of service quality, and increasing infrastructure management requirements. The second type is the basic type. This type of farmhouse has good infrastructure management, basic farmhouse characteristics, average operating environment, and lack of service quality. The third category is comprehensive. This type of farmhouse has a high level of infrastructure management, business characteristics are beginning to show, service quality is high, and the requirements for the operating environment are increasing.

4.2 Accommodation-Type Star Farmhouse Factor-Cluster Analysis

4.2.1 Factor Analysis of Accommodation Star Farmhouse

Using the same research method as the non-accommodation star farmhouse, the following results are obtained. Since accommodation services provide only one more room index than star-level farmhouses that do not provide accommodation services, the factors are named similarly: factor 1 is named as a characteristic management factor, factor 2 is named as an infrastructure management factor, and factor 3 is named as an operating environment Factor, factor 4 is named service quality management factor.[5]

In factor 1 (characteristic management factor), four-star farmhouses are dominant, and Wenjiang District, Jinniu District, Xinjin County, High-tech Zone, and Pidu District rank top and perform best. In factor 2 (infrastructure management), four-star farmhouses are dominant, and Qingbaijiang District, Wenjiang District, Jintang County, Jinjiang District, and Pengzhou City rank top and perform best. In terms of factor 3 (operating environment), three-star and four-star farmhouses are dominant, and Xinjin County, Jianyang City, Longquanyi District, Xindu District, and Chongzhou City rank top and perform best. In factor 4 (service quality management), three-star farmhouses are the mainstay. Xinjin County, Qingbaijiang District, Dayi County, Qionglai City, and High-tech Zone rank top and perform best.

4.2.2 Cluster Analysis of Accommodation Star Farmhouse

K-means clustering analysis is performed using SPSS. When the clustering category is 3, the clustering effect is optimal.

The first type is the basic type. This type of star-level farmhouse has a normal operating environment and is very lacking in characteristic management. Infrastructure management needs to be strengthened, and the quality of service needs attention. The second category is comprehensive. This type of star farmhouse pays more attention to characteristic management and service quality. The investment in infrastructure management and operating environment has weakened. The third category is normative. The infrastructure management of this type of star farmhouse is good, and the level of business environment is general. We should pay more attention to characteristic management and service quality needs to be improved.

4.3 Analysis of the Overall Clustering Results of Star-Level Farmhouses in Chengdu

The overall development of non-accommodation star farmhouses is relatively good, and most of them are in the middle-to-high level of development. There are few star-level farmhouses in the basic type, involving a small number of 2-star, 3-star, and 4-star farmhouses. The normative type star farmhouses account for one-third of the total, involving two-star, three-star, four-star, and five-star farmhouses, and all account for more than 30% of all star-level farmhouses. It is one-half of the comprehensive star-rated farmhouses, involving two-star, three-star, four-star, and five-star farmhouses, all of which account for about 50% of all star-level farmhouses.

The overall development of the accommodation-type star farmhouse is the same as that of the non-accommodation-star farmhouse. There are very few star-level farmhouses in the basic type, and only two-star farmhouses are involved. The normative type star farmhouses account for about one-third of the total, involving two-star, four-star, and five-star farmhouses, and all account for more than 30% of the star-level farmhouses. The two-third, three-star, four-star, and five-star farmhouses are relatively large-scale farmhouses, and the four-star and five-star farmhouses account for a large proportion.

According to the clustering results of accommodation and non-accommodation, most districts (cities and counties) of star-rated farmhouses in Chengdu have a mixed pattern of multiple types, with the normative and comprehensive types of middle and advanced development types. Among them, the representative star-level farmhouse is Pujiang County, the normative star-scale farmhouse is Dujiangyan City, and the comprehensive star-scale farmhouse is Pidu District.[6]

5. Suggestions

(1) Optimizing the evaluation standard of star farmhouse. The current “Sichuan Province Farmhouse Tourism Quality Classification and Evaluation Standards (Revised)” and “Sichuan Province Farmhouse/Rural Hotel Tourism Service Quality Rating Assessment and Management Interim Measures” are mainly aimed at scoring the hardware facilities of the farmhouse, and it is recommended to increase the theme features, Service quality, safety management, management performance software scores, and moderately reduce the hardware item score weight.

(2) Comprehensively optimize the hardware facilities of star farmhouses. Basic star farmhouses generally have a low level of development. Regular inspections of existing software and hardware facilities should be made to ensure that they are safe, stable, clean and tidy. The normative type star farmhouse has a certain material foundation, and attention should be paid to the updating of accommodation and catering facilities to create a comfortable experience. The development of comprehensive star farmhouse entertainment is more comprehensive. It is necessary to combine rural customs with design sense in farmyard to create a folk but not rough farmhouse atmosphere.

This paper apply theory of vulnerability to study the impacted degree of system under the impact of hazards or other disturbance factors. Then we establish the concept and theory of PVS, includes the concepts and its internal relations of PVS, PSS, PACS, the equilibrium point of PVS and the recovery point of PVS. Nonetheless, the research has not completed yet. There are further demonstration of this concept and theory to verify the rigor, precision and universality of its concept and trend. In addition, there are further empirical researches of the application of the theory of PVS to be done. We must figure out that the application of this theory when different systems are impacted by different sources, types and degrees of disturbance factors.

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