

Evaluation Model of Tourism Resources in Linxia Hui Autonomous Prefecture

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ABSTRACT

The analytic hierarchy process (AHP) is used to evaluate the tourism resources of Linxia Prefecture, in order to provide the basis for tourism planning, development, protection and sustainable utilization of Linxia Prefecture, which has important theoretical and practical significance. This paper attempts to construct the evaluation system of tourism resources in line with the characteristics of Linxia Prefecture by using AHP method. By constructing the judgment matrix of pairwise comparison, the paper determines the specific evaluation index and factor weight on the basis of consulting experts. The results show that there are various types of resources in Linxia Prefecture, natural tourism resources and human resources are very rich, which has driven the economic development of Linxia Prefecture.

Key words: Linxia Prefecture, analytic hierarchy process, resource evaluation

1. INTRODUCTION

AHP model is a multi-index comprehensive evaluation method, which combines qualitative and quantitative research methods to ensure the systematicness and rationality of the model. On the basis of authoritative and objective expert scoring evaluation in related disciplines, the uncertainty caused by subjective factors is reduced as much as possible. The design of the model aims to take a decision-making problem which needs to consider multiple factors as a whole system. The decision-making problem is decomposed into several criteria elements, and then the criterion elements (factors) are decomposed into several levels of multiple index elements (factors). Through the qualitative index fuzzy quantitative method, the weight number of each level is sorted, and the relative importance comparison of each index factor to the decision-making problem is obtained, which can be used as a systematic method for multi index and multi scheme optimization decision-making.

Wu Jun and sun Baoding [1] used AHP method to study the evaluation system of eco-tourism resources in small towns; Zhu Bingbing and Li Zhiqiang [2] evaluated and classified the quality of 18 rural beaches along Leizhou Peninsula according to the uniqueness of rural beach tourism beaches; Zhang Dongyue [3] and Jia Hui [4] provided reasonable reference suggestions for the sustainable development and utilization of rural tourism resources; Tao kefang and ye jiangeng [5] analyzed the actual tourism situation of Yunnan ethnic villages through the new variable fuzzy evaluation model; Zhao Xiyong, Zhang Lu [6] and other scholars used the evaluation index

system to evaluate the grade and development potential of rural tourism resources in Harbin; Chen Lijun, Su Jinbao [7], Chen laijiacuo, Qin Jianxiong [8] and other scholars used AHP method to study bird watching tourism resources and tourism resources development in minority areas;

2. EVALUATION OF TOURISM RESOURCES IN LINXIA PREFECTURE

Scientific evaluation of tourism resources is the premise of the development and utilization of tourism projects, which helps to improve the quality of tourism, grasp the direction of industry and enhance the comprehensive benefits of tourism. At present, the analytic hierarchy process (AHP) proposed by American operational research experts is widely recognized. It is a hierarchical and systematic decision analysis method. Combining qualitative and quantitative methods, it can quantify the decision thinking of complex systems and decompose them into different levels for analysis. This paper uses this method to evaluate the tourism resources of Linxia Prefecture. According to the national standard classification standard "classification, investigation and evaluation of tourism resources" (GB / t18972-2003), the evaluation model of tourism resources in Linxia Prefecture is constructed as shown in Figure 1, which is divided into three layers: target layer, criterion layer and scheme layer. In the second step, the judgment matrix is constructed, and the weight of each index is calculated with expert consultation. Finally, the consistency test is carried out.

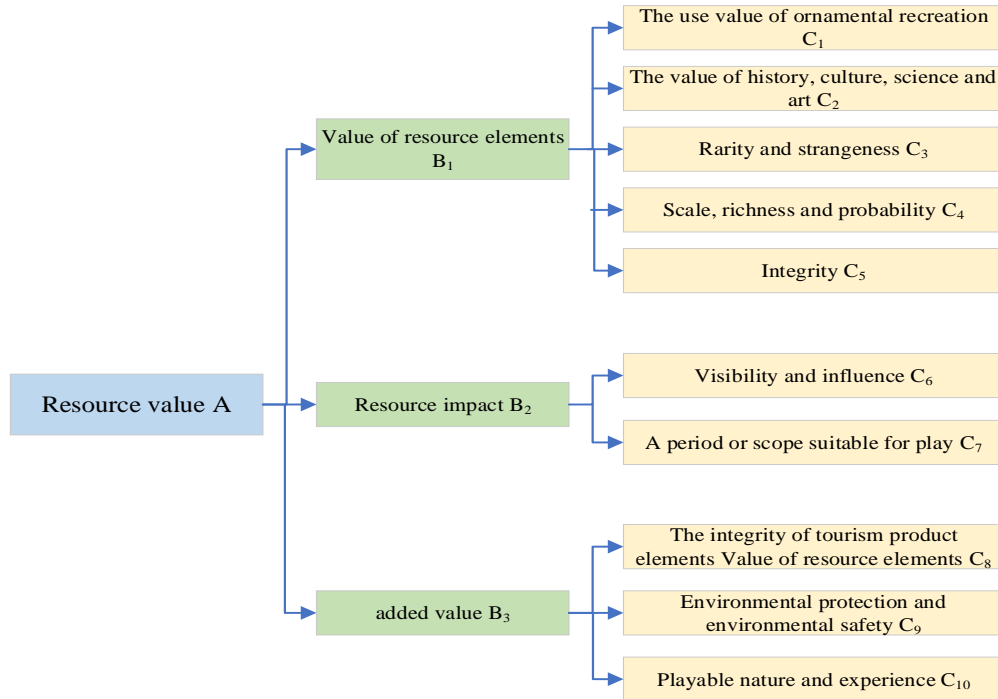


Fig.1 Tourism resources evaluation structure model

According to the evaluation model, the judgment matrix is constructed. Through expert consultation, each factor is scored by pairwise comparison according to the situation that the two are equally important, one is slightly, strongly, strongly, extremely important or in the excessive judgment, and their importance is quantified, so as to carry out resource evaluation and analysis. The specific scoring criteria are shown in Table 1. In the evaluation model, the relative importance of each layer to the upper layer is W_i , that is, the eigenvector of the largest eigenvalue λ_{max} of the judgment matrix is normalized, and then the consistency test is conducted. The judgment matrix is positive reciprocal matrix. When the maximum eigenvalue of the matrix is $\lambda = n$, the matrix passes the consistency test. In this paper, the consistency index is calculated by CI . The smaller the CI , the greater the consistency. The random consistency index RI is introduced to measure the

size of CI . Due to the existence of random problems, CI and RI are usually compared when testing whether the judgment matrix meets the requirements of consistency. If the comparison result is less than 0.1, the consistency test is considered to be passed. The formula is as follows:

$$CI = \frac{\lambda - n}{n - 1}$$

$$RI = \frac{CI_1 + CI_2 + \dots + CI_n}{n}$$

$$CR = \frac{CI}{RI}$$

Among them, CI is the consistency index, RI is the average random consistency index, Cr is the consistency proportion and is the eigenvalue of the matrix.

Tab.1 Index relative importance calibration series

Quantized value	Factor I than factor j
1	Equally important
3	Slightly important
5	Strong and important
7	Strong importance
9	Extremely important
2, 4, 6, 8	Intermediate value of two adjacent judgments

Tab.2 Judgment matrix of evaluation structure model

index	B_1	B_2	B_3	W_i
B_1	1	7	4	0.7049
B_2	1/7	1	1/3	0.0842
B_3	1/4	3	1	0.2109

Note: B_1 is the value of resource elements; B_2 is the influence of resources; B_3 is the added value.

Through calculation, the weight and Cr value of class B and C indicators in the criteria layer are obtained. The CR values of the four matrices constructed are about 0.0311, 0.0396, 0, 0.0036, which are all less than 0.1, indicating that they have passed the consistency test, and the calculated weights of each index are effective. According to the weight value, the indicators are sorted to obtain the importance. See Table 3. For the criterion layer, the resource type accounts for the largest proportion, Linxia is the most important criterion layer factor to evaluate the

tourism resources of Linxia Prefecture. Compared with other indicators, it has a great advantage. The historical, cultural, scientific and artistic value, rarity and strangeness rank higher. Linxia not only has Binglingsi grottoes, Hezheng ancient animal fossils and other museums, but also has strong folk customs and customs, which has great potential for exploration, while its suitable tourism period and scope of use rank low, We should make great efforts to tap tourism products in the off-season, such as winter ice and snow activities.

Tab.3 Results of comprehensive evaluation of tourism resources in Linxia Prefecture

Target layer A	Evaluation project level		Evaluation factor layer		sort
	Index	Weight W	Index	Weight W	
Tourism evaluation	Resource type B_1	0.7049	The use value of watching, playing and resting C_1	0.0581	7
			The value of history, culture, science and art C_2	0.3383	1
			Rarity and strangeness C_3	0.1909	2
			Scale, richness and probability C_4	0.0335	8
			Integrity C_5	0.0842	4
	Resource impact B_2	0.0842	Visibility and influence C_6	0.0674	5
			Suitable date or scope of use C_7	0.0168	10
	added value B_3	0.2109	The integrity of tourism product elements C_8	0.0211	9
			Environmental protection and environmental safety C_9	0.0633	6
			Tourism and experience C_{10}	0.1265	3

3. COMPREHENSIVE ANALYSIS

From the perspective of resource types, the weight of historical culture, science and art value is the most. Linxia Prefecture is one of the birthplaces of Chinese ancient culture and Chinese civilization. It has important historical, scientific and artistic value of physical data. Secondly, it is rare and strange degree, integrity, ornamental and recreational use value, which shows that Linxia state is rich in natural culture and has high participation value and ornamental value.

From the perspective of resource influence, Linxia has a relatively large popularity and influence of tourism resources. With a long history and culture, rich folk customs and rich tourism resources, Linxia is an important node in the golden section of the Silk Road Economic Belt, known as "the hometown of Chinese painted pottery", "the Expo Park of ethnic architecture", "the hometown of flowers in China".

From the perspective of added value, the nature and experience of tourism are relatively high. The reason is that Linxia Prefecture has never stopped exploring rich tourism resources, finding out the key points, and making efforts from multiple points to promote the development of tourism industry. Around the weak links of tourism

infrastructure such as tourism transportation, tourism accommodation, and tourism public toilets, the tourism public service ability has been continuously improved.

4. CONCLUSION

Linxia Prefecture is an area with relatively backward economic development and rich tourism resources. It is necessary to accurately grasp the value and orientation of its own tourism resources through scientific methods, optimize the development mode of tourism industry in an all-round, multi perspective and multi-level way. The tourism development of Linxia Prefecture should combine the value of its own resources, increase the development of local characteristic folk culture, and improve the experience and interest of national culture to tourists. It is an important task for Linxia Prefecture to improve the comprehensive quality and service quality of the staff. At the same time, we should also pay attention to the protection of the natural environment, and deal with the relationship between the natural environment and tourism development so as to promote the sustainable development of local tourism.

ACKNOWLEDGMENT

This work was supported by the project of Gansu Provincial Sports Bureau "diversified development path of rural sports from the perspective of targeted poverty alleviation - Taking Gansu" two prefectures and one county "as an example (GST201921).

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