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The Evaluation on Tourists' Satisfaction for Ecological Tourism Based on FAHP

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ABSTRACT

Ecotourism is a new form of tourism based on natural resources and ecological environment, which is of great significance to solve the contradiction between ecological environment protection and social and economic development. Ecotourism of Source in taihu lake scenic area of Lin'an has a strong development potential, but the rapid development of other forms of ecotourism, such as leisure agriculture and folk tourism, has caused a certain degree of impact on the development of he ecotourism of Source in taihu lake scenic area. Therefore, the evaluation of tourists' satisfaction of he ecotourism of Source in taihu lake scenic area has a strong promoting effect on the significant improvement of the comprehensive competitiveness of ecotourism scenic spots. Taking the ecotourism of Source in taihu lake scenic area as research object, the tourists' satisfaction was evaluated by the fuzzy comprehensive evaluation method based on hierarchical analysis, and the tourists' satisfaction and overall satisfaction in six dimensions including ecological environment, tourism resources, tourism facilities, service management, tourism consumption and tourism experience were analyzed. The results show that the tourist satisfaction of the ecotourism of Source in taihu lake scenic area is 3.4321, which basically reaches the level of satisfaction according to the principle of maximum membership. However, the scores in the dimension of ecological environment, tourism experience and service management are relatively low, so it is necessary to improve the ecological environment, improve tourists' sense of experience and improve service management, so as to put forward some practical countermeasures and suggestions for improving tourists' satisfaction and sustainable development of ecotourism in this ecological scenic spot.

KEYWORDS

Ecotourism; Travel satisfaction; Analytic hierarchy process; Fuzzy comprehensive evaluation; Source in taihu lake scenic area

1. INTRODUCTION

The rapid development of modern urban industry not only promotes the economic growth of the city region and even the whole country, but also causes great damage to ecological environment in many areas. With continuous reduction of urban ecological resources and ecological areas, people have a stronger desire to return to the original natural ecology. With the continuous enhancement of people's ecological awareness, people are more and more aware of the importance of protecting the ecological environment for the sustainable development of human beings. Ecotourism is an ingenious combination of ecological economy and tourism. It is based on natural resources and aims at ecological environmental protection. It propagates the concept of sustainable development to the public through various channels, so as to promote people's spontaneous protection of the natural ecological environment of the ecological zone. Ecotourism tourist satisfaction refers to the comprehensive psychological evaluation of scenic spot tourists on the ecological environment, resource development projects, tourism consumption and service management [1]. At present, the

research literature on the evaluation of tourist satisfaction mainly focuses on two aspects: evaluation indicators and evaluation methods [2-5]. In terms of evaluation indicators, Pizam et al. conducted a relatively early study. They took Cpe Cod coastal tourist attraction as the research area and tourist satisfaction as the research object. They conducted a comprehensive evaluation of tourist satisfaction in the tourist attraction with eight evaluation indicators including accommodation, catering, hospitality and rest places [6]. Since then, a large number of studies on tourist satisfaction evaluation indexes have emerged, and many scholars have constructed different tourist satisfaction index systems from multiple perspectives, including overall satisfaction evaluation and single satisfaction evaluation [7-9]. In terms of evaluation methods, more abundant research literature, many scholars are both normative research and empirical research, the combination of quantitative analysis combined with qualitative analysis, there is relatively widely used method of fuzzy comprehensive evaluation method [10-12], the analytic hierarchy process [13-14], structural equation model [15-17]and IPA analysis [18-19], etc. However, at present, there is still lack of relevant studies on the analysis of tourists' satisfaction by combining several methods.

As one of the most famous ecological scenic spots in China, Lin'an he ecotourism of Source in taihu lake scenic area has good conditions and development potential for developing ecotourism because of its abundant wildlife and relatively high forest coverage rate. Moreover, since the development of ecotourism, the development momentum is still very good. But in recent years, the rapid development of leisure agriculture, rural and rural folk tourism, and other forms of the ecological tourism caused fierce competition in the tourists market of the ecotourism of Source in taihu lake scenic area, at the same time, project activities of the ecotourism of Source in taihu lake scenic area led to ecological environmental declining quality [20]. In this context, the evaluation of tourist satisfaction in the ecotourism of Source in taihu lake scenic area is conducive to the improvement of tourists' awareness of ecological protection and ecological environment. Therefore, this study selected tourists from Source in taihu lake scenic area to conduct a questionnaire survey, using the Delphi technique and fuzzy hierarchy comprehensive evaluation method of the scenic area tourist individual satisfaction and overall satisfaction evaluation, in order to improve tourism service quality, improve the service management of scenic spots, and eventually to promote sustainable development of the scenic area of ecological tourism to provide certain reference, therefore the innovation of this research may exist in the use of fuzzy analytic hierarchy process (AHP) combined with analytic hierarchy process (AHP) and fuzzy comprehensive evaluation of the advantages of two kinds of evaluation methods and the essence, effectively overcome the subjectivity and fuzziness of evaluators.

2. MATERIALS AND METHODS

2.1. Research Area and Data Source

Source in taihu lake scenic area is located in the east of Tianmu Mountain natural ecological area, known as "Small Jiuzhaigou". Due to the high vegetation coverage, abundant wildlife species and abundant ecotourism resources in the scenic spot, the analysis of tourist satisfaction of ecotourism has a strong practical significance for the sustainable development of ecotourism. Therefore, the sample investigation team selected from October 2018 to August 2019 (covering the Spring Festival, National Day, May Day golden week, winter vacation and summer vacation and other important tourist peak periods) to issue 350 questionnaires to tourists in and around the Source in taihu lake scenic area, and took back 300 valid questionnaires, with an effective rate of 85.71%.

2.2. Evaluation Index Design

Under the condition of follow the principle of objectivity, comprehensiveness, this study analyzed the ecological tourism authority of related literature and combining the specific characteristics of the development of Source in taihu lake ecological tourism itself, at the same time, several related

domestic experts about tourism invited, using Delphi technology, build tourist satisfaction evaluation index system of Source in taihu lake ecological tourism. The index system is divided into three layers: the target layer (A) is the satisfaction degree of tourists in the ecotourism scenic spot; criteria layer(B) includes tourism resources (B1), ecological environment (B2), tourism facilities (B3), service management (B4), tourism consumption (B5) and tourism experience (B6); the index layer (C) is the specific index reflecting the criterion layer, including 25 specific indicators including the air quality (C5), climate environment (C6), and landscape greening coverage rate (C8). See table 1 for details.

Table 1. Evaluation index system of tourist satisfaction in ecotourism scenic spots

The target layer	Criterion layer	Index layer
Evaluation of ecotourism satisfaction (A)	Tourism resources (B1)	Landscape visibility (C1)
		Landscape folk culture inheritance degree (C2)
		Landscape singularity (C3)
		Property of participation of tourism project (C4)
	The ecological environment (B2)	Scenic air quality (C5)
		Climate environment of scenic spot (C6)
		Scenic spot animal and plant resources (C7)
		Scenic area green coverage rate (C8)
	Tourism Facilities (B3)	Traffic facilities (C9)
		Health facilities (C10)
		Safety facilities (C11)
		Accommodation facilities (C12)
	Service management (B4)	Service personnel quality of scenic spot (C13)
		Quality of scenic spot management personnel (C14)
		Scenic spot tourism project management (C15)
		Management of commercial activities in scenic spots (C16)
		Scenic area environmental protection management (C17)
	Tourism consumption (B5)	Food and beverage cost (C18)
		Transportation cost (C19)
		Accommodation costs (C20)
		Ticket prices (C21)
		Commodity prices (C22)
	Tourism experience (B6)	The possibility of revisiting again (C23)
		Recommending this scenic spot to others (C24)
		Enhanced awareness of environmental protection (C25)

2.3. Fuzzy Hierarchical Comprehensive Evaluation Method

The analytic hierarchy process (AHP) divides the decision problem into the target layer, the criterion layer and the index layer according to a certain standard solution. By solving the eigenvector of the judgment matrix, the weight of each element of each level to an element of the previous level is obtained. Fuzzy comprehensive evaluation method is to use the membership theory of fuzzy mathematics to make a general evaluation of objects restricted by a variety of factors. Fuzzy analytic hierarchy process (FAHP) combines the essence of fuzzy comprehensive evaluation and analytic hierarchy process (AHP), which can greatly reduce the subjectivity and fuzziness of evaluators. Therefore, this study will use the fuzzy analytic hierarchy process to conduct a comprehensive evaluation of tourists' satisfaction with Source in taihu lake ecological tourism, so as to determine the individual satisfaction score and the overall satisfaction score, which can provide references and suggestions for the improvement of the ecological environment and the sustainable development of Source in taihu lake scenic area.

2.3.1. AHP process

(1) Firstly, complex problems are decomposed into different factors and classified according to certain standards, and then an evaluation model of multidimension and level is established.

(2) According to the weight gradient table, the weight comparison values of each factor are marked to form the weight judgment matrix, which must meet the criteria of $a_{ij}=1/a_{ji}$.

(3) The judgment matrix is used to obtain the maximum eigenvector. On this basis, the CR value of the consistency index is calculated. If the CR value is less than 0.1, the judgment matrix has consistency.

(4) In order to conduct comprehensive evaluation, it is necessary to obtain the weight of each element of each layer on the target.

2.3.2. Establishment of fuzzy comprehensive evaluation model

(1) Determine the factor set U and the evaluation set V of the evaluation object;

(2) Determine the weight W of each influencing factor and obtain the fuzzy relation matrix R;

(3) Find the fuzzy comprehensive evaluation set B, that is, B=W×R

Remove the fuzzy value, and obtain the comprehensive evaluation score E:E=B×H

3. RESULTS AND ANALYSIS

3.1. Determination of Evaluation Index Weight and Consistency Test

The evaluation index system of ecotourism tourist satisfaction includes multiple indicators such as the first and second levels, and these indicators have different weights for ecotourism tourist satisfaction. In this paper, AHP method will be used to determine the weight of each evaluation index of ecotourism tourist satisfaction. On the basis of consulting relevant tourism experts, the paired comparison method is adopted. According to the score results of the interviewed experts, the average value is taken as the final score of this paper, so the judgment matrix of the evaluation indicators is formed:

Table 2. Judgment matrix scale value and its meaning

a_{ij}	Pairwise comparisons between indicators
1	The Ith element is as important as the Jth element
3	The Ith element is slightly more important than the Jth element
5	The Ith element are obviously more important than the Jth element
7	The Ith element is much more important than the Jth element
9	The Ith element is extremely more important than the Jth element
2, 4, 6, 8	Above standard median value
multiplicative inverse	The two elements are compared in reverse

Table 2 is an internationally accepted scoring standard, according to which the following judgment matrix can be formed, and the value of the judgment matrix is $a_{ji}=1/a_{ij}$.

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \cdots & \cdots & \cdots & \cdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix} \quad (1)$$

According to the equation (1), the maximum eigenvalue lambda Max λ_{max} is calculated. In this paper, the geometric average method is used to calculate the approximate value of the eigenvalue, as shown in equation (2)

$$\overline{W} = \sqrt[n]{M_i} = \sqrt[n]{\prod_{j=1}^{n} a_{ij}} \tag{2}$$

W is calculated according to formula (2), which is the weight vector of the index [W_1, W_2..., W_n]. The specific formula is calculated as follows:

$$W = \frac{\overline{W_i}}{\sum_{i=1}^{n} \overline{W_i}} \tag{3}$$

In order to be reasonable, the consistency ratio CR of matrix R should be tested: CR=CI/RI. CI is the consistency index of judgment matrix R, $CI = \frac{\lambda_{\max} - n}{n-1}$. The maximum eigenvalue

$$\lambda_{\max} = \frac{\sum_{i=1}^{n} (\frac{AW_i}{W_i})}{n}$$

RI is the mean random consistency index, as shown in table 3.

Table 3. Random consistency index

n	1	2	3	4	5	6	7	8	9
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45

When the CR value is less than 0.10, the judgment matrix is judged to have passed the consistency test. If the CR value is greater than 0.1, the judgment matrix needs to be adjusted to achieve the final consistency. According to the requirements of analytic hierarchy process (AHP), the consistency test was conducted on MATLAB software. Finally, the 7 groups of judgment matrices passed the consistency test. The 7 groups of judgment matrices were calculated on MATLAB software.

Table 4. Weight of first level indicators

A	B1	B2	B3	B4	B5	B6	W	CR=CI/RI
B1	1	3	7	5	6	9	0.4839	0.0985
B2	1/3	1	2	4	3	5	0.2115	
B3	1/7	1/2	1	5	4	2	0.1360	
B4	1/5	1/4	1/5	1	1/2	1/3	0.0394	
B5	1/6	1/3	1/4	2	1	3	0.0751	
B6	1/9	1/5	1/2	3	1/3	1	0.0541	

Table 5. Weight of tourism resources dimension

B1	C1	C2	C3	C4	W	CR=CI/RI
C1	1	7	3	4	0.5470	0.0392
C2	1/7	1	1/5	1/3	0.0560	
C3	1/3	5	1	3	0.2695	
C4	1/4	3	1/3	1	0.1274	

Table 6. Weight of ecological environment dimension

B2	C5	C6	C7	C8	W	CR=CI/RI
C5	1	3	1/5	1/7	0.0834	0.0778
C6	1/3	1	1/6	1/9	0.0434	
C7	5	6	1	1/4	0.2563	
C8	7	9	4	1	0.6169	

Table 7. Weight of tour facilities dimension

B3	C9	C10	C11	C12	W	CR=CI/RI
C9	1	1/3	6	3	0.2699	0.0867
C10	3	1	7	5	0.5534	
C11	1/6	1/7	1	1/5	0.0454	
C12	1/3	1/5	5	1	0.1313	

Table 8. Weight of service management dimension

B4	C13	C14	C15	C16	C17	W	CR=CI/RI
C13	1	1/2	1/5	3	1/7	0.0710	0.0636
C14	2	1	1/3	1	1/6	0.0864	
C15	5	3	1	4	1/3	0.2433	
C16	1/3	1	1/4	1	1/9	0.0522	
C17	7	6	3	9	1	0.5468	

Table 9. Weight of tourism consumption dimension

B5	C18	C19	C20	C21	C22	W	CR=CI/RI
C18	1	1/2	2	1/4	3	0.1371	0.0101
C19	2	1	5	1/2	5	0.2766	
C20	1/2	1/5	1	1/7	1	0.0618	
C21	4	2	7	1	6	0.4651	
C22	1/3	1/5	1	1/6	1	0.0591	

Table 10. Weight of travel experience dimension

B6	C23	C24	C25	W	CR=CI/RI
C23	1	3	1/3	0.2577	0.0284
C24	1/3	1	1/5	0.1045	
C25	3	5	1	0.6377	

3.2. Fuzzy Comprehensive Evaluation

After constructing the evaluation index system of ecotourism tourist satisfaction, the importance of each level of factors should be evaluated. In this paper, the weights calculated by AHP above are selected as the weights of the evaluation factors. The evaluation factor set of tourist satisfaction of Source in taihu lake scenic area ecotourism is U,U={U_1,U_2... U_n}, respectively represents the six criteria of ecological environment, tourism resources, tour facilities, service management, tourism price and tourism experience. The set composed of secondary index factors that affect the evaluation object is denoted as U_i, then U_i={U_{i1},U_{i2}... U_{in}}, I=1, 2,..., n. Construct V is a set of all possible overall evaluation results given to the evaluation object, then V={V_1,V_2...,V_n}={very unsatisfied, unsatisfied, general, satisfied, very satisfied}, measurement scale vector $H=(1,2,3,4,5)^T$. According to the

questionnaire score of ecotourism tourists' satisfaction (omitted), the ratio of the number of index U_{ij} belonging to the evaluation set V to the total number is obtained, namely, R_{ij}=(1,2,3,4,5,6). By using the single-factor fuzzy evaluation model, the fuzzy relationship matrix of tourist satisfaction at six criteria levels, including tourism resources, ecological environment, tourist facilities, service management, tourism price and tourism body, is determined:

$$R_1 = \begin{bmatrix} 0.1032 & 0.1264 & 0.2103 & 0.3098 & 0.2503 \\ 0.1008 & 0.1575 & 0.1963 & 0.2803 & 0.2651 \\ 0.0998 & 0.1170 & 0.2049 & 0.3285 & 0.2498 \\ 0.0878 & 0.1245 & 0.2428 & 0.2516 & 0.2933 \end{bmatrix}$$

$$R_2 = \begin{bmatrix} 0.0505 & 0.0883 & 0.2801 & 0.4026 & 0.1785 \\ 0.0458 & 0.0614 & 0.3021 & 0.3894 & 0.2013 \\ 0.0387 & 0.0701 & 0.3013 & 0.3901 & 0.1998 \\ 0.0416 & 0.0887 & 0.2782 & 0.3899 & 0.2016 \end{bmatrix}$$

$$R_3 = \begin{bmatrix} 0.0801 & 0.1041 & 0.1987 & 0.4073 & 0.2098 \\ 0.0935 & 0.1095 & 0.2248 & 0.2525 & 0.3197 \\ 0.0787 & 0.1149 & 0.2197 & 0.2529 & 0.3338 \\ 0.0882 & 0.0986 & 0.1999 & 0.3701 & 0.2432 \end{bmatrix}$$

$$R_4 = \begin{bmatrix} 0.1042 & 0.1497 & 0.2289 & 0.2931 & 0.2241 \\ 0.1098 & 0.1525 & 0.1997 & 0.2838 & 0.2542 \\ 0.1179 & 0.1326 & 0.1896 & 0.3201 & 0.2398 \\ 0.0974 & 0.1075 & 0.1884 & 0.3580 & 0.2487 \\ 0.0994 & 0.1346 & 0.2405 & 0.3091 & 0.2164 \end{bmatrix}$$

$$R_5 = \begin{bmatrix} 0.0678 & 0.0867 & 0.2897 & 0.3444 & 0.2114 \\ 0.1031 & 0.1025 & 0.2189 & 0.3635 & 0.2120 \\ 0.0896 & 0.1088 & 0.2476 & 0.3775 & 0.1765 \\ 0.0796 & 0.0952 & 0.2542 & 0.3817 & 0.1893 \\ 0.0698 & 0.0899 & 0.2386 & 0.4008 & 0.2009 \end{bmatrix}$$

$$R_6 = \begin{bmatrix} 0.0661 & 0.0836 & 0.2298 & 0.4352 & 0.1853 \\ 0.0566 & 0.0798 & 0.3515 & 0.3053 & 0.2068 \\ 0.0646 & 0.0688 & 0.4104 & 0.2953 & 0.1609 \end{bmatrix}$$

The formula $B=W_i^T R_i$ (i =1,2,3,..6), where Wi is the weight of the factor layer, is used to obtain the second-level fuzzy evaluation set:

$$B_1 = W_1^T \times R_1 = \begin{bmatrix} 0.0505 & 0.0887 & 0.2801 & 0.4026 & 0.1998 \end{bmatrix}$$

$$B_2 = W_2^T \times R_2 = \begin{bmatrix} 0.0998 & 0.1245 & 0.2428 & 0.2563 & 0.2933 \end{bmatrix}$$

$$B_3 = W_3^T \times R_3 = \begin{bmatrix} 0.0935 & 0.1095 & 0.2248 & 0.2699 & 0.3197 \end{bmatrix}$$

$$B_4 = W_4^T \times R_4 = \begin{bmatrix} 0.1179 & 0.1346 & 0.2405 & 0.3091 & 0.2398 \end{bmatrix}$$

$$B_5 = W_5^T \times R_5 = \begin{bmatrix} 0.1031 & 0.1025 & 0.2542 & 0.3817 & 0.2120 \end{bmatrix}$$

$$B_6 = W_6^T \times R_6 = \begin{bmatrix} 0.0646 & 0.0836 & 0.4104 & 0.2953 & 0.1853 \end{bmatrix}$$

According to the fuzzy comprehensive evaluation formula $E=B_iH_i$ (i=1,2... ,6), where H_i is the measurement scale vector, the evaluation of each criterion level is defuzzified to obtain the

satisfaction evaluation value of tourism resources, ecological environment, tourism facilities, service management, tourism consumption and tourism experience respectively:

$$E_1=E_1H_1=1B_{11}+2B_{12}+3B_{13}+4B_{14}+5B_{15}=3.6776$$

$$E_2=E_2H_2=1B_{21}+2B_{22}+3B_{23}+4B_{24}+5B_{25}=3.5689$$

$$E_3=E_3H_3=1B_{31}+2B_{32}+3B_{33}+4B_{34}+5B_{35}=3.6650$$

$$E_4=E_4H_4=1B_{41}+2B_{42}+3B_{43}+4B_{44}+5B_{45}=3.5440$$

$$E_5=E_5H_5=1B_{51}+2B_{52}+3B_{53}+4B_{54}+5B_{55}=3.6575$$

$$E_6=E_6H_6=1B_{61}+2B_{62}+3B_{63}+4B_{64}+5B_{65}=3.5707$$

According to the first-level index weight and the second level fuzzy evaluation set, the evaluation set of ecotourism tourist satisfaction is obtained:

$$A=W\times B=[0.0998 \quad 0.1245 \quad 0.2801 \quad 0.4026 \quad 0.1998]$$

The normalized treatment is:

$$A=W\times B=\left[0.0901 \quad 0.1125 \quad 0.2531 \quad 0.3638 \quad 0.1805\right]$$

Finally, the comprehensive evaluation score of tourists' satisfaction of ecotourism is obtained through fuzzy calculation:

$$E=EH=1\times0.0901+2\times0.1125+3\times0.2531+4\times0.3638+5\times0.1805=3.4321$$

3.3. Analysis of Evaluation Results

According to the above empirical analysis results, the overall satisfaction rating value of tourists is 3.4321, which is basically between "general" and "satisfactory", according to the principle of maximum membership. From evaluation criterion layer, the tourist satisfaction rating value of tourist satisfaction of tourism resources in the criterion layer is the highest, reaching 3.6776, suggesting that the development degree of ecotourism resources of Source in taihu lake is good, with high visibility of landscape, with strange and attractive landscape, the landscape with sufficiently high degree of folk cultural heritage, with relatively high participation of tourism development projects; The tourist satisfaction evaluation index of service management dimension is the lowest, which is only 3.5440, indicating that the service personnel quality and management quality of scenic spot may not be very high. Tourism project management, business activity management and environmental protection management may not be particularly perfect, which needs to be improved urgently.

4. CONCLUSIONS AND DISCUSSIONS

In this paper, six research dimensions of ecotourism satisfaction are set up, including tourism resources, ecological environment, tourism facilities, service management, tourism consumption and tourism experience, and an evaluation model of ecotourism tourists' satisfaction is preliminarily constructed. In terms of research methods, this paper firstly uses the analytic hierarchy process (AHP) to determine the weight of the evaluation index, and then uses the fuzzy comprehensive evaluation method (FCE) to evaluate the tourists' satisfaction with the ecotourism of Source in taihu lake. Evaluation results show that: (1) the evaluation of rule layer, highest the tourist satisfaction evaluation of tourism resource is the highest, reaching 3.6776, this suggests that suggesting that the development degree of ecotourism resources of Source in taihu lake is good, with high visibility of landscape, with strange and attractive landscape, the landscape with sufficiently high degree of folk

cultural heritage, with relatively high participation of tourism development projects. Tourist satisfaction rating of tourist facilities ranked second, reaching 3.6650. This shows that the Source in taihu lake scenic area has good infrastructure, convenient transportation, high security in terms of safety, standard toilet catering hygiene conditions, and good catering and accommodation service quality, all of which provide a strong backing for the sustainable development of ecotourism of Source in taihu lake. The value of tourist satisfaction index of tourism consumption dimension is 3.6575, which indicates that the consumption price of catering, transportation, accommodation, tickets and commodities in Source in taihu lake scenic area is reasonable and easy for tourists to accept. The tourist satisfaction rating value of tourism experience dimension ranks the fourth, at 3.5707, indicating that tourists may visit this scenic spot again, and may also recommend this scenic spot to others in various ways. In addition, this tour may increase the awareness of environmental protection in tourism. This indicates that the ecotourism experience level of Source in taihu lake is not high enough, which may be caused by other factors such as service management and ecological environment. The evaluation index of tourists' satisfaction in the dimension of ecological environment ranked the fifth, with a value of 3.5689, indicating that the air quality and climate conditions in Source in taihu lake scenic area may not be satisfactory, the species of animal and plant resources are not rich enough, and the vegetation coverage rate has not reached people's expectations. The tourism satisfaction evaluation index of service management dimension is the lowest, which is only 3.5440, indicating that the service personnel quality and management quality of the scenic spot may not be very high. Tourism project management, business activity management and environmental protection management may not be particularly perfect and need to be improved. (2) In the comprehensive evaluation of the target layer, the overall tourists satisfaction rating value of ecotourism of Source in taihu lake reached 3.4321, which was basically between "general"and "satisfactory". according to the principle of maximum membership. Relatively speaking, the tourists' satisfaction level of ecotourism of Source in taihu lake was at a relatively satisfactory level. The ecotourism of Source in taihu lake has relatively good development prospects and development potential. The research conclusion of this paper is consistent with the actual situation of ecotourism development of ecotourism of Source in taihu lake. Therefore, it can be seen that the evaluation result is reasonable, the selection of evaluation model is appropriate, and has certain representativeness and pertinence. (3) The index system of ecotourism tourist satisfaction constructed in this paper cannot cover all the influencing factors of tourist satisfaction due to the existence of many influencing factors of tourist satisfaction and the limited rationality of human understanding of the world. Therefore, in the future research, it will further enrich the evaluation index system of tourists' satisfaction of ecotourism of Source in taihu lake, and make a horizontal comparison with other countries' ecotourism scenic spots. While enriching the evaluation theory, it can also provide a set of feasible practical plans for promoting the healthy and sustainable development of ecotourism in China.

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