Evaluation of rural tourism development conditions of typical villages in Qilian County based on AHP-FCE

Yun Guan, Zhongxia Tang

School of Geography Science, Qinghai Normal University, Xining, China

Abstract. Through the evaluation of the rural tourism development conditions of typical villages in Qilian County, the rural tourism level of Qilian County is divided at the current stage, and it provides reference suggestions for the promotion of rural revitalization of rural tourism in Qilian County. Based on the two perspectives of tourism basic conditions and tourism participation, the index evaluation system is constructed, the hierarchical analysis method is used to calculate the weights of each indicator, and the fuzzy comprehensive evaluation method is used to calculate the rural tourism development condition level of 17 typical villages in Qilian County. The tourism development conditions of typical villages in Qilian County are generally good, and they are divided into 3 types, 2 excellent-level villages, 13 better-level villages, and 2 general-level villages. Among them, the score of infrastructure conditions is 1.665 to 2.212 points, the gap is small, and the difference in tourism participation status score is 1.103 to 1.935 points, and the gap is significant. The overall tourism development conditions of Qilian County are better and the future development potential is large; the tourism development conditions of its typical tourist villages show a decreasing distance trend with Zhuoershan-Amidongsuo as the core; the rural tourism service system in the county is gradually improved but the endogenous development capacity is weak, and it is appropriate to establish a development route according to the spatial layout and the classification of each village.

Keywords: Analytic hierarchy process; fuzzy comprehensive evaluation; rural tourism development evaluation; Qilian County.

1. Introduction

As a new growth point of the rural economy under the background of the new normal, rural tourism can not only highlight the main role of farmers but also promote the integration and development of industries [1], thereby driving the improvement of the overall local environment and the improvement of residents' well-being [2]. With the rapid development of rural tourism, relevant departments at all levels have repeatedly issued relevant policy documents to support the development of rural tourism. The No. 1 Document of the Central Committee in 2022 clearly proposes to focus on the development of rural leisure tourism and other industries. However, the rapid development of rural tourism has also led to problems such as disorderly development, waste of resources, and homogenization of products [3], so it is necessary to classify the conditions for rural tourism development and classify and formulate development routes.

Rural tourism is a way of tourism that attracts urban residents with rural landscapes and activities as attractions, and meets their needs for entertainment, curiosity, and closeness to nature. [4] Chinese scholars' research on rural tourism mainly focuses on rural tourism models [5], sustainable development of rural tourism [6], rural revitalization [7], rural tourism community participation and stakeholder research [8-9]. In recent years, with the development of rural tourism, a series of problems such as disorderly development of resources and damage to the environment have also been exposed, and scholars have begun to shift their attention to the evaluation on of rural tourism. At present, the evaluation and research of rural tourism mostly involves the evaluation of rural tourism resources [10], the evaluation of rural tourism competitiveness [11], the evaluation of rural tourism service quality [12], and the research of rural revitalization evaluation system [13]. In recent years, it has gradually shifted from the traditional evaluation of tourism resources to the research paradigm of combining qualitative and quantitative. In the evaluation of rural tourism, scholars mostly promote the development of tourism evaluation in relevant areas based on empirical perspectives, but there are still the following deficiencies in the research: in the research area, most of them are concentrated in the developed areas in the east, and there are fewer relevant studies in the northwest region, especially the Qinghai-Tibet Plateau; in terms of research...
methods, qualitative and quantitative are less, and most of the models and methods are used at the surface; in terms of research content, the impact of tourism participation on the sustainable development of rural tourism is ignored to a certain extent.

Qinghai Province is in the northwest inland, and its unique plateau climate has created agriculture and animal husbandry with Qinghai characteristics, forming a rural landscape of agricultural and pastoral areas with plateau characteristics. In recent years, Qinghai Province has successively issued documents to encourage rural revitalization through rural tourism. As a national tourism demonstration area, Qilian County has developed into a leading local industry, with great potential for the development of rural tourism, and the core area of Qilian Mountain National Park carries functions such as education and recreation, but lacks corresponding research on tourism development conditions. Therefore, this study takes 17 typical villages in Qilian County as the research object, evaluates their tourism development conditions based on AHP and fuzzy comprehensive evaluation method and makes suggestions, aiming to promote rural tourism in Qilian County to promote rural revitalization, so that it is better in line with the construction of Qilian Mountain National Park and Qinghai Province's international eco-tourism destination.

2. material and study methods

2.1 Study area and data

1) Overview of the study area

Qilian County is in the northeast of Qinghai Province, the northwest of Haibei Prefecture, and borders Gansu Province to the north, so named because it is in the hinterland of the middle section of Qilian Mountain, with a total area of 14,000 square kilometers. By the end of 2019, the county has a population of 52,700 people, of which ethnic minorities account for 81.68%, there are 15 ethnic groups such as Han, Tibetan, Mongolian, Hui, etc., with cultural diversity; under the jurisdiction of 3 towns and 4 townships, a total of 45 administrative villages and 4 communities in the county; the altitude is high, located in the alpine mountains, belonging to the continental climate.

Qilian is distributed in the Zhuoer Mountain, Ami dongsuo, Bayi Glacier and other well-known tourist attractions, the unique snow scenery and grassland scenery make it "Heaven Qilian", "Oriental Switzerland" known as. Compared with other parts of the country, rural tourism in Qilian County has developed late, but the development momentum is strong. After 2016, Qilian County adjusted its industrial structure and built tourism into a strategic pillar industry of the national economy. With the role of the pilot area and brand promotion of Qilian Mountain National Park in 2017, the proportion of tourism in Qilian County in GDP has risen rapidly. Since 2019, tourism revenue has accounted for up to 75% of GDP, and tourism has become one of its leading industries. Under the active promotion of the local government, Qilian County was rated as a national all-round tourism demonstration area, and successively compiled the "Qilian County Rural Tourism Planning" and the "Qilian County Rural Tourism Site Management Measures", and successfully built several well-known rural tourism villages represented by Ladongtai Village.

2) Data sources

There are many villages in Qilian County, and the study determines the nature of each village based on the preliminary field interview data and the "Notice of the List of Key Rural Tourism Villages in Qinghai Province" and "Notice of the List of Five-star and Four-Star Rural Tourism Reception Points in Qinghai Province" (Table 1), and finally selects Baiyanggou, Binggou, Chengdong, Dongsuotai, Gaoquan, Huangzangsi, Ladong, Ladongtai, Malaha, Yingpantai, Ebao, Laorigen, Caodaban, Guomi, Bianma, Dalang, Tuole, 17 typical tourist villages, were used as the final research points. According to the proportion of the number of people in each village, a total of 250 questionnaires were distributed, and 241 copies were recovered, with a recovery rate of 96.4%. The questionnaire data was imported into SPSS24.0 for testing, the reliability was 0.88, the validity was 0.87, and the results were passed. Among them, the road and elevation data are derived from the geographic national conditions monitoring cloud platform and the geospatial data cloud.

Table 1. Typical villages and quality of tourism development in Qilian County

<table>
<thead>
<tr>
<th>Quality</th>
<th>Name of villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural tourism key villages</td>
<td>Baiyanggou, Binggou, Ladongtai, Malaha, Guomi, Ebao, Gao leng</td>
</tr>
<tr>
<td>Scenic dependent villages</td>
<td>Baiyanggou, Binggou, Ladongtai, Malaha, Ebao, Caodaban, Dalang, Chengdong</td>
</tr>
<tr>
<td>Villages with star-rated rural tourism reception points</td>
<td>Binggou, Ladong, Dongsuotai, Ladongtai, Baiyanggou, Caodaban, Ebao, Laorigen, Gao leng, Bianma, Guomi</td>
</tr>
<tr>
<td>Villages with developed vigorously</td>
<td>Huangzangsi, Yingpantai, Tuole</td>
</tr>
</tbody>
</table>
2.2 Research Methodology

3) Indicator selection and AHP method

Qilian County is located in the hinterland of the Qilian Mountains, an important ecological barrier in the northwest, and this study mainly draws on the "evaluation index system of community tourism development conditions" created by Zhong Linsheng [14], refers to other related studies [15-17], and considers the special location of the study area and the provincial conditions of Qinghai Province to construct an index evaluation system (Table 2).

Based on the field questionnaire research, the hierarchical analysis method was used to calculate the weights. The hierarchical analysis method can combine qualitative and quantitative research and clarify various levels of complex systems to obtain scientific and reliable conclusions [18]. First, the nine-degree scale method was used to compare the indicators and construct $u-a_1\sim b_1$, $a_1-b_1$~conclusions [18]. First, the $n$-level complex systems to obtain scientific and reliable quantitative research and clarify various levels of analysis method was used to calculate the weights. The weights of each index are obtained through the above calculation, the weights of each index and the consistency test is performed.

$$\lambda = \frac{\sum_{i=1}^{n} (nW_{ij})}{n(n-1)}$$
$$CI = \frac{\lambda - a_1}{n - 1}$$
$$CR = CI/RI$$

In the above formula, $\lambda$ is the maximum characteristic root, W is the characteristic value, CI is the consistency index, CR is the consistency ratio, RI is the average random consistency index, if CR<0.1, then the consistency of the judgment matrix passes.

Through the above calculation, the weights of each index of rural tourism development conditions are obtained (Table 2) and passed the consistency test.

Table 2. Evaluation index system of rural tourism development conditions in qilian county

<table>
<thead>
<tr>
<th>Target Level</th>
<th>Target Level</th>
<th>Factor layer (weight vector)</th>
<th>Indicator layer (weight vector)</th>
<th>Final weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural tourism development conditions</td>
<td>Rural tourism development conditions</td>
<td>Village location $a_{11}$ (0.229)</td>
<td>Distance between village and tourist road $a_{111}$ (0.286)</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elevation $a_{12}$ (0.714)</td>
<td></td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Environment condition $a_{12}$ (0.401)</td>
<td>Quality of tourism resources $a_{21}$ (0.434)</td>
<td>0.96</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number of tourism infrastructures $a_{22}$ (0.566)</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social-environmental conditions $a_{13}$ (0.370)</td>
<td>Government support funding input $a_{31}$ (0.196)</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Village landscape coherence $a_{32}$ (0.157)</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Harmony in village-people relations $a_{33}$ (0.201)</td>
<td>0.41</td>
</tr>
</tbody>
</table>

| | | Tourism participation behaviour $b_1$ (0.352) | Harmony of host-client relationship $b_{134}$ (0.162) | 0.0 33 |
| | | | Village cultural heritage degree $a_{135}$ (0.152) | 0.0 31 |
| | | | Good village sanitation $a_{136}$ (0.132) | 0.0 27 |
| | | | Operating catering accommodation $b_{111}$ (0.139) | 0.0 22 |
| | | | Operating retail goods $b_{112}$ (0.158) | 0.0 25 |
| | | | Operating entertainment items $b_{113}$ (0.145) | 0.0 23 |
| | | | Provision of agricultural products $b_{114}$ (0.152) | 0.0 24 |
| | | | Participation in Travel Dividend $b_{115}$ (0.203) | 0.0 32 |
| | | | Labour for tourism enterprises $b_{116}$ (0.203) | 0.0 32 |
| | | | Willingness to participate in tourism planning $b_{121}$ (0.156) | 0.0 23 |
| | | | Willingness to participate in tourism surveillance $b_{122}$ (0.106) | 0.0 2 |
| | | | Willingness to participate in tourism business activities $b_{123}$ (0.286) | 0.0 42 |
| | | | Willingness to participate in tourism decision making $b_{124}$ (0.136) | 0.0 2 |
| | | | Willingness to participate in tourism skills training $b_{125}$ (0.177) | 0.0 26 |
| | | | Willingness to participate in environmental protection in tourism $b_{126}$ (0.109) | 0.0 16 |
| | | | Ability to manage tourism investments $b_{131}$ (0.299) | 0.0 43 |
| | | | With knowledge and skills $b_{132}$ (0.389) | 0.0 56 |
| | | | Level of tourism market knowledge $b_{133}$ (0.312) | 0.0 45 |

4) Fuzzy comprehensive evaluation

a) Determining the factor set and evaluation set

The factor set of rural tourism development conditions in the target layer is established as $u = \{a_i, b_j\}$; the factor set in the quasi-lateral layer is $a_i = \{a_{i1}, a_{i2}, a_{i3}\}, b_j = \{b_{i1}, b_{i2}, b_{i3}\}$; the factor set in the factor layer is $a_{i1} = \{a_{i11}, a_{i12}\}, a_{i2} = \{a_{i21}, a_{i22}, a_{i23}\}, a_{i3} = \{a_{i31}, a_{i32}, a_{i33}\}, b_{i1} = \{b_{i11}, b_{i12}, b_{i13}, b_{i14}, b_{i15}\}, b_{i2} = \{b_{i21}, b_{i22}, b_{i23}, b_{i24}, b_{i25}, b_{i26}\}, b_{i3} = \{b_{i31}, b_{i32}, b_{i33}\}$. 


After referring to related studies [19-20], the evaluation set of rural tourism development conditions was set to 5 levels, \( V = \{ \text{Excellent (4~5 points), Better (3~4 points), Fair (2~3 points), Poor (1~2 points), Very Poor (0~1 point)} \} \).

b) Setting affiliation degree and constructing fuzzy matrix
Using the questionnaire survey method, the comment set \( C = \{ \text{very agree, agree, general, disagree, very disagree} \} \) corresponding to the rating set of the rating set, the frequency of the respondent's rating of the evaluation object is the degree of affiliation. Among them, the affiliation evaluation grade [21-22] of the distance and elevation between the village and the tourist road is \( D = \{ 0~200, 200~400, 400~600, 600~800, 800~1000 \} \), \( E = \{ 0~2500, 2500~3000, 3000~4000, 4000~5000, 5000~8000 \} \), referring to the membership function used by Li Hongxu [23] to obtain the membership degree.
The set composed of corresponding membership degrees is the fuzzy matrix \( R \), taking Poplar Valley Village as an example:

\[
R_{n1} = \begin{bmatrix}
0.850 & 0.150 & 0 & 0 & 0 \\
0.243 & 0.287 & 0.470 & 0 & 0 \\
0.342 & 0.658 & 0 & 0 & 0 \\
0.000 & 0.000 & 0.000 & 0.000 & 0.000 \\
0.000 & 0.000 & 0.000 & 0.000 & 0.000
\end{bmatrix}
\]

And so on, calculate \( R_{n2}, R_{n3}, R_{n4}, R_{n5} \).

c) Multilevel fuzzy comprehensive evaluation
Fuzzy comprehensive evaluation is a multi-level fuzzy evaluation to obtain the final fuzzy evaluation results.

\[
B = W \ast R = [w_1 R_{11}, w_2 R_{12}, \ldots, w_n R_{1n}]
\]

In equation (4), \( W \) is the weight value of the \( n \)th evaluation factor, and \( r_{mn} \) is the element in the fuzzy comprehensive evaluation matrix.
The first-level fuzzy comprehensive evaluation is a fuzzy comprehensive evaluation of the factor layer to the indicator layer, taking Baiyanggou village as an example.

\[
R_{11} = W_{11} \ast R_{n1} = [0.286, 0.714, 0.098, 0.015, 0.000]
\]

Similarly, \( B_{12}, B_{13}, B_{14}, B_{15} \) can be obtained.
The second-level fuzzy comprehensive evaluation is a fuzzy comprehensive evaluation of the criterion layer to the factor layer, taking Baiyanggou village as an example:

\[
R_{11} = W_{11} \ast R_{n1} = [0.229, 0.401, 0.370, 0.023, 0.078, 0.087, 0.071, 0.031, 0.001, 0.008, 0.043, 0.032, 0.045, 0.036, 0.134]
\]

Similarly, \( B_{21} \) can be calculated.
The three-level fuzzy comprehensive evaluation is a fuzzy comprehensive evaluation of the target layer to the criterion layer, taking Baiyanggou village as an example:

\[
R_{11} = W_{11} \ast R_{n1} = [0.551, 0.449, 0.600, 0.015, 0.153, 0.026, 0.046, 0.012, 0.008, 0.162, 0.028, 0.045, 0.123, 0.057, 0.121, 0.216]
\]

Similarly, the scores of other villages can be calculated.

d) Fuzzy comprehensive evaluation results
In order to overcome the rank bias caused by using the maximum affiliation to establish the rank, the rank of the rubric set \( V \) is treated as a vector \( V = (5, 4, 3, 2, 1) \), and the final score of each village is \( N = V \ast B_n \) [24], taking Baiyanggou village as an example:

\[
N = V \ast B = [0.381, 0.123, 0.157, 0.121, 0.216] = 3.328
\]

In the same way, the scores of other villages can be calculated.

3. Results and analysis
Based on the calculation, the evaluation results of the rural tourism development conditions in Qilian County are as follows.

![Figure 1. Qilian County rural tourism development conditions evaluations results](image)

<table>
<thead>
<tr>
<th>Village</th>
<th>Label</th>
<th>Location</th>
<th>Social Environment</th>
<th>Tourism Environment</th>
<th>Basic Conditions</th>
<th>Participation Behavior</th>
<th>Participation Status</th>
<th>Total Score (Ranking)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biao</td>
<td>0</td>
<td>67 7</td>
<td>2.0</td>
<td>0.0</td>
<td>22.0</td>
<td>0.0</td>
<td>53.0</td>
<td>44.0</td>
</tr>
<tr>
<td>Yanggou</td>
<td>0</td>
<td>80 3</td>
<td>0.0</td>
<td>2.0</td>
<td>1.0</td>
<td>21.0</td>
<td>50.0</td>
<td>44.0</td>
</tr>
<tr>
<td>Binggou</td>
<td>0</td>
<td>67 3</td>
<td>0.0</td>
<td>2.0</td>
<td>20.0</td>
<td>53.0</td>
<td>8.0</td>
<td>27.0</td>
</tr>
<tr>
<td>Che</td>
<td>0</td>
<td>76 9</td>
<td>0.0</td>
<td>2.0</td>
<td>0.0</td>
<td>44.0</td>
<td>72.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Table 3. Qilian County Rural Tourism Development Conditions Evaluation Results
<table>
<thead>
<tr>
<th>Village</th>
<th>Comprehensive Score</th>
<th>Tourism Development Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ladongtai</td>
<td>4.128</td>
<td>Excellent</td>
</tr>
<tr>
<td>Chengdong Community</td>
<td>4.118</td>
<td>Excellent</td>
</tr>
<tr>
<td>Dalang</td>
<td>4.118</td>
<td>Excellent</td>
</tr>
<tr>
<td>Malahai</td>
<td>4.075</td>
<td>Excellent</td>
</tr>
<tr>
<td>Tuole</td>
<td>4.047</td>
<td>Excellent</td>
</tr>
<tr>
<td>Yingpantai</td>
<td>4.038</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

3.1 The overall conditions for tourism development in Qilian County are relatively good

According to the results of the previous field research and evaluation, the tourism development conditions of the classic villages in Qilian County selected in this study are generally good, with a total of 2 excellent-grade villages, 13 better-level villages and 2 general-level villages. The evaluation results show that the comprehensive scores of Ladongtai Village and Chengdong Community are the highest at 4.128 and 4.118 points respectively, which are
close to the high-quality tourism resources in the Zhuoershan-AmiDonggusuo area and have a long development history, and the residents participate in tourism development channels, so the scores of tourism infrastructure and tourism participation are higher than those of other villages, which are excellent villages. In terms of general-level villages, Dalang Village (2.992 points) is subject to certain restrictions and constraints on tourism development under the current policy system due to its proximity to Qilian Mountain National Park; Tolle Village (2.678 points) is far from Qilian County and the main source markets around it, and the scores of tourism infrastructure and tourism participation are low. In addition, the other 13 better-level villages have a certain foundation for tourism development, which is not only the focus of further improving the level and scale of tourism development in Qilian County in the future, but also one of the starting points for Qilian to integrate into the "Ganqing Grand Ring Road" and the tourism pattern of Northwest China. The evaluation results of this study are basically consistent with the objective situation of tourism development in Qilian County, indicating that the index evaluation system constructed is more reasonable.

In terms of index weight, the basic conditions of tourism (0.551) are slightly higher than the tourism participation status (0.449), indicating that the local tourism resources and tourism environment dominate its tourism development and construction process to a greater extent, and the tourism participation status is directly related to the sustainability of local tourism development. Among them, the elevation (0.090), tourism resource quality (0.096), and tourism infrastructure quantity (0.125) weighs in the index layer account for a relatively large proportion, indicating that the construction and development of local tourism is closely related to the suitable living environment, tourism resource endowments and infrastructure improvement. Overall, since the scores of the basic conditions of each village are not much different, and the ranking of tourism participation status is relatively consistent with the overall ranking, the score of tourism participation status determines the local tourism development conditions to a greater extent, and the basic conditions of tourism play a regulatory role. The tourism development of Qilian County has certain innate advantages and basic conditions, but the current lack of high-level and high-standard development and construction, so how to use a variety of means to encourage residents to participate in local tourism development and ecological environmental protection is an urgent problem to be solved in the future.

3.2 Small gap in the evaluation of tourism infrastructure conditions
The basic tourism conditions of each village are generally better and the difference within the group is not large, and the score gap is between 1.665 and 2.212 points, mainly because Qilian County has rich tourism resources and is widely distributed throughout the county, and the government has increased investment in tourism infrastructure, such as road hardening, scenic public toilets, and wall painting, etc. in order to ensure the construction of the global tourism demonstration zone, which has improved the basic conditions for tourism development in various villages. Qilian is located on the Qinghai-Tibet Plateau, with an average altitude of 3169m, and the magnificent plateau scenery is not only a major advantage for attracting tourists, but also affects the comfort of tourists to a certain extent [25], so the social environment and tourism environment score are better than the location conditions of the village. Among them, Ladongtai Village attracts most of the tourists to Qi because of its proximity to the Zhuoer Mountain Scenic Area, the passenger flow is relatively stable and the relevant tourism infrastructure construction is perfect, so the score of 2.212 ranks first. Villages with low scores such as Tole Village and Dalang Village are in a relatively weak position in the tourism development pattern of Qilian County because of their relatively remote location.

3.3 Significant differences in tourism participation status evaluation
The scores for tourism participation in each village were generally low and varied widely within the group, with scores ranging from 1.103 to 1.935 points, with the highest score being about 1.91 times the lowest score. From Table 3, only the Chenguang community (1.935 points), Ladongtai village (1.916 points), Malahve village (1.707 points), and Ebao village (1.541 points) reached the passing line in total. Specifically, the overall score of tourism participation behavior is poor, and the overall willingness to participate in tourism is high, but the score of tourism participation ability is low, indicating that the endogenous development ability of villages is insufficient. Objectively speaking, the tourism participation of Qilian County and even Haibei Prefecture is still in the stage of spontaneous participation, and the characteristics of residents' participation in tourism at this stage are mainly manifested in spontaneous operation and free competition, so most of the villages operate extensively and in a single form, with residents spontaneously opening farms and providing characteristic agricultural and sideline products, etc., and the overall level of tourism services is not high. Most of the villages with passing scores are typical scenic-based villages, mainly relying on the source of tourists from high-quality tourist attractions to carry out tourism services, while other villages have a high willingness to participate in tourism due to the limited scale of the tourism market, but it is difficult to participate in tourism activities in substance due to personal ability and other restrictions, and in the initial stage of tourism development, a symbiotic model of various stakeholders has not yet been formed[8], so the gap in tourism participation in various villages is significant.

4. Conclusion
In this study, an index evaluation system for the development conditions of rural tourism in Qilian County was constructed, and 2 excellent-level villages, 13 better-level villages, and 2 general-level villages were divided. In the case study of 17 villages in Qilian County, the following conclusions are drawn: (1) the overall tourism participation status is relatively low, but the scores of tourism participation in some villages are relatively high, such as Chenguang community (1.935 points), Ladongtai village (1.916 points), Malahve village (1.707 points), and Ebao village (1.541 points) reached the passing line in total. Specifically, the overall score of tourism participation behavior is poor, and the overall willingness to participate in tourism is high, but the score of tourism participation ability is low, indicating that the endogenous development ability of villages is insufficient. Objectively speaking, the tourism participation of Qilian County and even Haibei Prefecture is still in the stage of spontaneous participation, and the characteristics of residents' participation in tourism at this stage are mainly manifested in spontaneous operation and free competition, so most of the villages operate extensively and in a single form, with residents spontaneously opening farms and providing characteristic agricultural and sideline products, etc., and the overall level of tourism services is not high. Most of the villages with passing scores are typical scenic-based villages, mainly relying on the source of tourists from high-quality tourist attractions to carry out tourism services, while other villages have a high willingness to participate in tourism due to the limited scale of the tourism market, but it is difficult to participate in tourism activities in substance due to personal ability and other restrictions, and in the initial stage of tourism development, a symbiotic model of various stakeholders has not yet been formed[8], so the gap in tourism participation in various villages is significant.
development conditions of Qilian County are generally good and the future development potential is large; (2) the tourism development conditions of typical tourist villages in Qilian County are decreasing with Zhuoershan-Amidongsuo as the core; (3) the service system of rural tourism in Qilian County to help rural revitalization is gradually improved but the endogenous development ability is weak.

5. Discussion

As one of the first batch of shortlisted national full-scale tourism demonstration zones, Qilian County shoulders the important mission of promoting rural revitalization and high-quality development. The study focuses on the development conditions of rural tourism in Qilian County, constructs an index evaluation system based on the actual situation of Qilian County, and conducts a fuzzy comprehensive evaluation, aiming to explore the conditions and existing problems of local tourism development. However, the index evaluation system of this study still needs to be further revised and improved, and the combination of tourist questionnaire and resident questionnaire can be considered in the future. In addition, due to the limitations of objective conditions and other aspects, this study only analyzes the 17 villages that currently support, participate in tourism development, or have conditional development in Qilian County, and does not take all the villages in Qilian County as the research object.

On the other hand, the whole-area tourism should be effectively developed according to local conditions [26], so it is appropriate to establish development routes and develop guidance paths according to the spatial layout and classification of each village. The details are as follows: For the development of villages with excellent development conditions, we should rely on the development of the ZhuoerShan-AmiDongsuo 5A scenic spot, dig deep into the local multi-ethnic culture, actively use the "Tianjing Qilian" series of performances to tell the story of Qilian, and consolidate the achievements of residents' participation in tourism while enriching tourism brand products for Qinghai Province to build an international eco-tourism destination.

For villages with better development conditions, because the joint excellent villages make full use of the advantages of the central urban area of Qilian County, relevant tourism support policies have been introduced to encourage qualified villagers to apply for special financial loans to improve the level of tourism participation; in addition, colleges and universities and enterprises should also actively contact universities and enterprises to regularly organize catering and accommodation services and tourism-related knowledge training, comprehensively enhance residents' ability to participate in tourism development, and better meet market requirements.

For villages with general development conditions, because they are far from the core tourism market of Qilian County and are subject to relevant restrictions in the control area of Qilian Mountain National Park, low-intensity nature education and ecological tourism projects should be appropriately developed on the premise of protecting the ecological environment. In addition, we should also create special agricultural and animal husbandry products such as Qilian yellow mushrooms and Qilian yaks, increase the added value of tourism products, realize the optimization and upgrading of the industrial structure of villages in agricultural and pastoral areas, and further cultivate endogenous development capabilities with the help of rural tourism.

References


21. Zhou Wei, Liu Fang, Zhao Rui, Nong Weizhi. Study on the spatial pattern of traffic accessibility in mountainous rural areas based on entropy power-TOPSIS[J]. Western Transportation Science and Technology, 2020(09): 133-137.


