

The Research on Evaluation Index System of Island Tourism Sustainable Development

Haiyan Jin

Ningbo University - University of Angers Joint Institute at Ningbo University, Ningbo, China

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Abstract: With the development of the marine economy, the marine tourism industry has also received more and more attention. Island tourism is an important part of the development of marine resources and the development of marine industry. Scientific evaluation and planning of island tourism resources will help improve the quality of island tourism and enhance the comprehensive benefits of islands. At present, there are few studies on the evaluation system of island tourism resources in China, and there is no unified and effective evaluation index system. The island tourism resources are systematically measured from three aspects: tourism resource conditions, regional conditions and location characteristics. At the same time, the evaluation criteria of the corresponding indicators are given, and the evaluation is made by establishing the rating scale criteria and determining the evaluation index weights and establishing a comprehensive evaluation model. The system is operational in the quantitative evaluation of island tourism resources. The island tourism resource evaluation system constructed in accordance with China's national conditions provides the basis for the planning and development of China's island tourism.

1. Introduction

The 21st century is the ocean century. Ocean tourism is an important part of the marine industry group, while island tourism is the “pear” of the “crown” of marine tourism. At present, foreign island tourism is very mature. The value of island tourism in the Maldives has accounted for more than 30% of GDP. Hawaii's island tourism has become its second largest industry, and the Caribbean, Greece and other countries also attach great importance to island tourism [1]. China is one of the countries with the most islands in the world. There are more than 7,000 large and small islands with a total area of over 80,000 km². According to statistics, the number of tourists in China's coastal and island areas has increased at an annual rate of 20% to 30%. From south to north, from the development of Hainan Island International Tourism Island and Zhoushan Islands, to the construction of Dalian Changshan Islands Tourism Summer Resort, the development of China's island tourism development is on the rise.

2. The goal of sustainable development of island tourism

Sustainable development refers to “development that meets the needs of the present without compromising the ability of future generations to meet their needs”. Sustainable development is not only a problem of economic development, but also closely related to the ecological environment and social development, that is, development is the common development, coordinated development and balanced development of the three [1]. The sustainable development of tourism is to scientifically and rationally develop and utilize tourism resources on the premise of protecting the environment and ecological balance, so as to make full use of existing resources without destroying existing resources, while exploiting resources while developing resources.

With the goal of protecting the ecology and beautifying the environment, we will rationally develop and utilize island tourism resources. Environmental protection has received increasing attention, and development and construction in all areas of society have been based on the protection

of the environment. This is especially true for tourism, because it is responsible for beautifying the human living environment [2]. Although the island's tourism resources are abundant, there are also problems of disorderly development. Therefore, it must be developed and utilized under the premise of protection. To this end, the government and tourism authorities need to develop existing tourism resources scientifically and systematically, so that the island's tourism resources can be fully applied; on the other hand, it is necessary to beautify the environment and make in-depth use of tourism resources to make effective resources play an infinite role.

3. Problems in the sustainable development of island tourism in China

3.1 Excessive development of tourism resources

Over-exploitation, leading to resource destruction and affecting sustainable development, is a global problem. For example, Hawaii's unrestrained tourism development has on the one hand made the local government burden the local residents with public facilities such as schools and roads, and low-cost housing. On the one hand, it has caused problems in living expenses, traffic congestion and crime, and the construction of tourist attractions [2]. Bringing a large number of new immigrants and urban culture trends, bringing fundamental changes to the local pastoral landscape.

3.2 Imperfect tourism management mechanism

Although the Chinese tourism management system has undergone many years of reform, it has not yet emerged from the framework of the government's allocation of resources. The tourism management system still has a strong planning color, only considering the development of the "inner economy" of tourism, while ignoring the "external economy", forming a microeconomic scale of tourism economy, and the macro structure is not economic [3]. For example, there are many local management systems in Zhejiang Ocean Tourism Area that are unreasonable. There are tourism resources divided according to administrative regions. Within the same administrative region, they belong to different departments, so that the original rich resources are divided, and resources cannot be complemented and coordinated. And the situation of unified development. The results of the various regions and departments operating independently and rushing will only result in high investment, low output, and waste and destruction of tourism resources.

3.3 Insufficient characteristics of Chinese island tourism products, low revisit rate

In the face of such fierce market competition, island tourism has not formed its own unique style and characteristics. As far as most of China's island tourism is concerned, it only stays in a general seaside tourism and sightseeing. The products around the world are similar, and there is no strong attraction for tourists. Due to the lack of a global concept, they are all independent in tourism development, which inevitably leads to the repeated construction of island tourism projects in the region. The result will inevitably lead to competition, low efficiency and low revisit rate [3].

Although tourists have a good impression of the island, only a few people said they would choose to revisit. There are three main reasons: First, the island tourism project does not have much characteristics, it is a tourism product; second, the island tourism cost is too high; There are too many unpredictable risks in island tourism, such as seasickness, wind and waves, and insufficient supply of life on the island.

3.4 Environmental pollution reduces the development of China's island tourism

In recent years, pollutants discharged into the sea in China's coastal areas have surged. Land-based pollutants carried by large rivers have finally flowed into the oceans. The exploitation of offshore oil fields and the carrying of oil and other pollutants have caused serious pollution to the marine and island environment. The overfishing and indiscriminate exploitation of rare island biological resources in some islands is very serious; some islands are free to build the island dam, causing water flow to block and destroy the ecology of the nearby seas [3]. Accumulation of pollutants and pollution of the sea area deteriorates the island and its surrounding environment and the loss of

ecosystem functions.

4. Discussion on the evaluation system of china's island tourism resources

The above evaluation system evaluates island tourism from different angles. The index system constructed by scholars at home and abroad is limited to the evaluation of specific research areas. Its use is not extensive, and the index system contains fewer evaluation factors. Not comprehensive enough, and the classification is confusing and lacks systematicity. In the existing research, there are few studies on the evaluation of island tourism resources, and there is no complete evaluation system [4]. Therefore, according to the characteristics of island tourism resources, we draw on the advantages and disadvantages of domestic and foreign island tourism related evaluation systems, and construct a reasonable and effective island tourism resource evaluation system.

4.1 Establishment of evaluation index system

4.1.1 Basis and principle of establishment

The island's ecological environment and natural resources combine the characteristics of both the terrestrial environment and the marine environment, but its geographical location, natural resources, natural environment and socio-economic conditions are distinct from the land. It forms an independent and independent ocean. Therefore, the evaluation of island tourism resources should highlight its own characteristics. It is not comprehensive to evaluate its own resource attributes. It should also include the island location characteristics and regional conditions [5]. In addition, since the island is a regional complex independent of the mainland, with a small area and a fragile ecological environment, the environmental quality and protection should be more concerned in the evaluation indicators.

4.1.2 Establishment of indicator system

Based on the above principles, on the basis of the “national standard”, the island tourism resources evaluation index system was determined. This paper systematically measures the island tourism resources from three aspects: island tourism resources, regional conditions and location characteristics (Fig.1) [4]. Compared with the existing tourism resource evaluation system, the comprehensive evaluation index of island tourism resources constructed in this paper has the following characteristics:

- (1) There are 3 evaluation layers, and the hierarchical structure is more detailed and clear;
- (2) 9 evaluation index factors to make an assessment of island tourism resources more accurately, objectively and comprehensively;
- (3) The evaluation index factor is easy to measure and easy to use;
- (4) Each indicator increases the corresponding evaluation criteria, making the evaluation results more uniform.

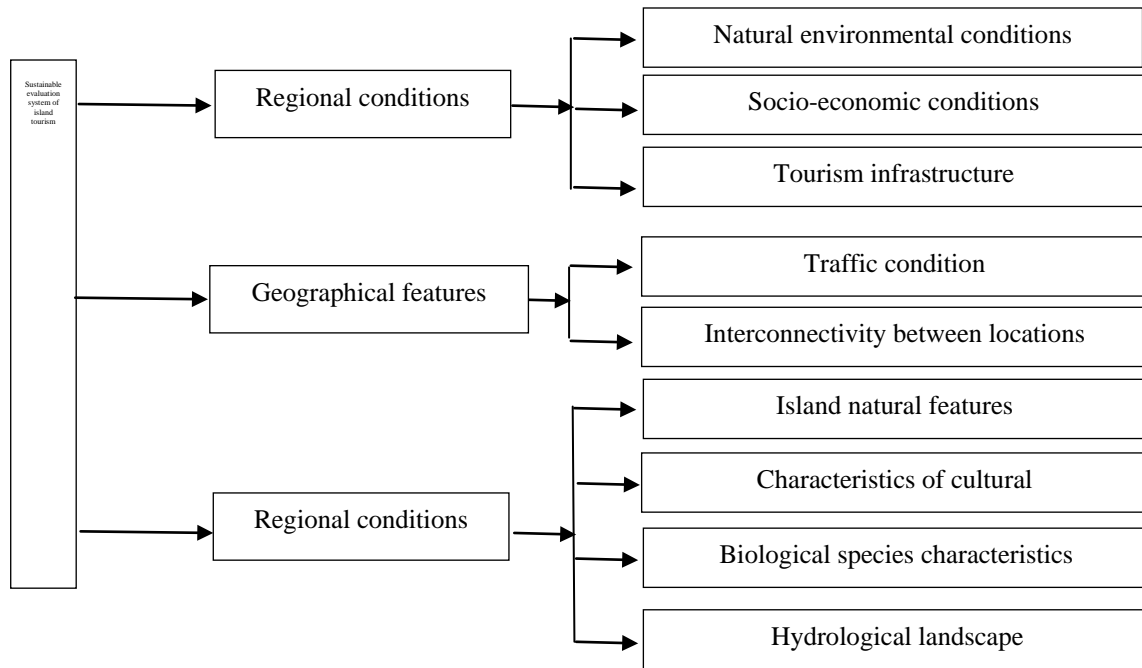


Fig. 1 Island tourism resources evaluation index system

4.2 Evaluation index weight establishment

4.2.1 Develop rating criteria

Using the Likert five-level scale to measure the island tourism resources evaluation indicators, the evaluation value is 5, 4, 3, 2, 1, the higher the score, the better the quality; with reference to foreign scoring standards and relevant Chinese regulations, will be part The scoring criteria for quantifiable factors are appropriately adjusted to make the scoring more scientific and practical. Fuzzy scores are used for non-quantitative factors, such as low, low, high, high, and high, which can be scored by surveys of tourists and experts [5]. When the indicator level is between two adjacent levels, the corresponding score are 4.5, 3.5, 2.5, 1.5.

4.2.2 Determining the weight of evaluation indicators

The weight calculation method used in this paper is based on the principal component analysis (PCA) correction proposed “quasi-principal component analysis method”, which is to normalize the index coefficients of the first principal component as the corresponding weights of each indicator in the comprehensive evaluation index [6].

By designing the questionnaire index of index weight coefficient of island tourism resources evaluation system, experts and scholars who are familiar with island tourism resources in the fields of tourism, ecology, environmental science and human geography are invited to assign scores to various factors in the index system according to the scoring grade standard.

4.3 Evaluation index weight calculation and analysis

According to the framework guidelines of the island tourism resource evaluation system, and through the method of formulating the quantitative evaluation weights of island tourism resources, the island tourism resource evaluation index system is established, and the corresponding index weights and evaluation criteria are given [6].

Among the weighting layers of tourism resources, the heavens and climate landscapes have the most weights, followed by the waters and landscapes. The purpose of highlighting the abundance of island tourism resources and climate landscapes and waters is the main factor attracting tourists [7]. In regional conditions, social and economic conditions have the greatest weight, tourism infrastructure is second, and natural environmental conditions account for a small proportion. In many aspects, such as fresh water and electricity, the island is more expensive than land.

4.4 Comprehensive evaluation model

The individual indicators in the island tourism resource evaluation index system reflect the island tourism resources from a certain aspect. If comprehensive consideration is given to the island's tourism resources, it is necessary to construct a comprehensive evaluation model of island tourism resources [7]. Based on the multi-objective linear weighting function method, combined with the actuality of the Chinese island, the function expression of the island tourism resource evaluation model is as follows:

$$E = \sum_{k=1}^{n_1} \{ A_k \cdot \sum_{j=1}^{n_2} [B_{kj} \cdot \sum_{i=1}^{n_3} (C_{ji} \cdot P_i)] \}$$

Where E is the comprehensive score of island tourism resources; A_k is the weight of the kth evaluation factor in the evaluation comprehensive layer; B_{kj} is the weight of the jth sub-evaluation factor indicator of k evaluation factors; C_{ji} is j secondary evaluation The weight of the i-th evaluation index in the factor; P_i is the score of the i-item evaluation index; n₁ is the number of indicators included in the evaluation comprehensive layer; n₂ is the number of indicators included in the evaluation item layer; n₃ is the evaluation factor layer Contains the number of indicators.

The comprehensive evaluation model has a score of 50 and is divided into 5 evaluation levels: I, ≥ 40 ; II, 30~40; III, 20~30; IV, 10~20; V, <10 points.

5. Summary

Based on the characteristics of island tourism resources, this paper constructs an island tourism resource evaluation index system, systematically measures island tourism resources from three aspects: tourism resource conditions, regional conditions and location characteristics, and gives the evaluation criteria of corresponding indicators. The grading standard and the weight of the evaluation index and the establishment of a comprehensive evaluation model make the evaluation system operability in the quantitative evaluation of island tourism resources. This paper constructs a comprehensive evaluation model of island tourism resources, and sets the evaluation grade standard, which provides a scientific basis for the evaluation and classification of island tourism resources.

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