Analysis on Relation Measuring and Development Innovation Path of Tourism Economy in Shenyang Economic Zone

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Abstract This article firstly measures the tourism economy relations in Shenyang Economic Zone, and summarizes the spatial structure of tourism economy in Shenyang Economic Zone. The results show that Shenyang is in the central position and its tourism resource has obvious advantages. Finally, this paper provides the development innovation path of tourism economy in Shenyang Economic Zone.

Key words Tourism economy relation degree, Shenyang Economic Zone, Development path

Shenyang Economic Zone takes Shenyang as the center, covering Shenyang, Anshan, Fushun, Benxi, Yingkou, Fuxin, Liaoyang, and Tieling - eight cities in radius of 100 kilometers. It is an important part of the northeast economic zone and circum - Bohai - Sea metropolitan area. Although Shenyang Economic Zone has rich tourism resources, it is unaware of the lack of regional tourism spatial structure in the whole regional tourism circle construction, which leads to weakness of regional tourism development integration, and it doesn't form the integration development. Therefore, how to rely on the existing regional advantages to realize the tourism resources development, provide talent sharing, promote the competitiveness of the regional tourism resources and speed up the development of regional tourism integration, becomes the problem to be urgently to solved.

1 Tourism economic relation measuring of Shenyang Economic Zone

1.1 Analysis method The article uses gravity model to reflect the spatial structure, its formula is $R_{ij} = \frac{\sqrt{P_i}V_i \cdot \sqrt{P_j}V_j}{D_{ij}^b}$, where P_i and P_j are respectively the total number of tourists in tourist city i and tourist city j (the sum of domestic tourism and the inbound tourists); V_i and V_j are respectively the total tourism revenue of tourist city i and tourist city j (the sum of domestic tourism income and tourist foreign exchange income). Among them, tourist foreign exchange income counts by US dollars; this article adopts the foreign exchange rate of 1:6.2; D_{ij} is the distance between tourist city i and tourist city j (unified the highway mileage between cities[1]), b is the distance friction effect index for measuring, usually taking 2 as experience.

This article uses the analyzing data mainly from Liaoning Statistical Yearbook 2013 of China Statistics Press, and Statistical Yearbook of China Tourism 2013 of China Travel & Tourism Press.

1.2 Tourism economy relation level analysis Table 1 shows that the role and status of Shenyang are particularly prominent, which is the center of tourism economy relation in Shenyang Economic Zone. According to the qualitative analysis in the table, we can summarize the tourism economy relation spatial structure in Shenyang Economic Zone as follows: (i) High intensity zone - tourism core distribution zone. It shows that tourism economic relations between cities are mainly concentrated in a few surrounding cities in Shenyang Economic Zone. With Shenyang as the core, five cities of Anshan, Fushun, Benxi, Liaoyang, and Tieling contitute the tourist core distribution zone. (ii) High intensity zone - tourism close axis. Shenyang and Yingkou constitute the close axis of tourism relation in Shenyang Economic Zone. (iii) Weak intensity zone - edge tourist city. Fuxin belongs to the edge of the Shenyang Economic Zone tourism city, which has weak economic relations with Shenyang.

1.3 Tourist city clustering measuring Referring to relevant research results[2-3], we select 16 variables to reflect the regional tourism economic development: X_1 is world natural/cultural heritage; X_2 is national key scenic area; X_3 is national nature reserve; X_4 is national forest park; X_5 is national key cultural relics protection; X_6 is national historical and cultural city; X_7 is star hotel; X_8 is five-star hotel; X_9 is four-star hotel; X_{10} is total number of travel agencies; X_{11} is international travel agencies; X_{12} is domestic travel agencies; X_{13} is the total tourism revenue (10^9 yuan); X_{14} is the proportion of tourism revenues in GDP (%); X_{15} is the international tourists (person trip); X_{16} is tourism foreign currency income (10^4 US dollars).

We adopt data processing software of SPSS software, and use multivariate statistics methods[4]. We use SPSS17.0 software for orthogonal relative rotation, calculate the characteristic value and characteristic vector value, calculate principal components variance contribution rate and the cumulative contribution rate to determine the principal components score, and calculate the principal component loads to make load matrix, calculate the principal component scores, and further calculate the comprehensive score.

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Table 1 Tourism economy relation value in Shenyang Economic Zone Unit: 10^9 yuan · 10^4 person trip/km^2

City	Shenyang	Anshan	Fushun	Benxi	Yingkou	Fuxin	Liaoyang	Tieling
Shenyang	–	42.562	163.125	74.741	10.398	6.034	60.912	48.097
Anshan	42.562	–	9.953	5.943	9.525	2.593	137.031	5.892
Fushun	163.125	9.853	–	10.563	2.343	1.853	8.642	18.739
Benxi	74.761	5.943	10.563	–	1.973	0.863	24.371	21.482
Yingkou	10.398	9.525	2.343	1.973	–	1.863	5.649	1.386
Fuxin	6.034	2.593	1.853	0.863	1.863	–	1.021	1.136
Liaoyang	60.912	137.031	8.642	24.371	5.649	1.021	–	3.672
Tieling	48.097	5.892	18.739	21.482	1.386	1.136	3.3672	–

Table 2 The clustering scores of various tourist cities

City	Comprehensive scores	Ranking
Shenyang	10.68	1
Anshan	4.83	2
Benxi	3.96	3
Fushun	2.63	4
Yingkou	1.79	5
Liaoyang	1.68	6
Fuxin	0.85	7
Tieling	0.42	8

From Table 2, we can see that Shenyang has comprehensive score far ahead of others, which plays the prominent role. Shenyang is the capital of Liaoning province, which constitutes the backbone of the regional tourism system in Shenyang Economic Zone.

1.4 Tourism resource endowment measuring Taking the world natural and cultural heritage, national key scenic area, national nature reserve, national forest park, national key cultural relics protection units, national historical and cultural city – tourism resources endowment as the measuring index, we refer to relevant research results[5], and use ranking method, to calculate the absolute abundance index (A) of various cities' tourism resource in Shenyang Economic Zone, relative abundance index (C), and total abundance of tourism resources (F). The formula is as follows:

$$P_i = \frac{mn - \sum_{j=1}^{m} d_{ij}}{mn - n},\ F = \sqrt{A * C}$$

where P_i is the total abundance of tourism resource of City i, and m is the relative city's number (taking 8).

Table 3 Total abundance of tourism resources

City	F value	Ranking	A value	C value
Shenyang	0.803	2	0.897	0.718
Anshan	0.654	6	0.795	0.538
Fushun	0.773	3	0.833	0.718
Benxi	0.839	1	0.846	0.833
Yingkou	0.756	4	0.795	0.718
Fuxin	0.712	5	0.808	0.628
Liaoyang	0.651	7	0.769	0.551
Tieling	0.62	8	0.769	0.5

From Table 3, we can see that the two cities with high scores of the total abundance of tourism resource in Liaoning province are Benxi, and Shenyang; the two cities with low scores are Liaoyang and Tieling. Tourism resources abundance advantages in Shenyang Economic Zone are mainly concentrated in the eastern and central area. These areas have various tourism resources, large quantity, high abundance, and good regional combination, which help to organize the high intensity tourism industry, and form resources fully for the development of tourism economic belt and tourism economic zone.

2 Tourism development innovation path in Shenyang Economic Zone

2.1 Creating strategy development pattern in Shenyang Economic Zone According to the "core – margin" tourism spatial structure in Shenyang Economic Zone, we need to intensify development to create strategy development pattern of Shenyang Economic Zone, and form "one core, five margins" development strategy pattern. "One core" takes Shenyang as the core of tourism development in Shenyang Economic Zone, prominently constructs its characteristic tourism resources, and makes it as the head of the tourism industry in Shenyang Economic Zone. We need to give full play to the "one core", Shenyang tourism resources construction, and give full play to its aggregation and radiation to its surrounding areas, realize the rational development of tourism resources in Shenyang Economic Zone, and take tourism industry development by leaps and bounds[6]. Areas are divided into: Shen – Tie, Shen – Ben, Shen – Fu, Shen – Fu, Shen – Liao – An – Ying, five margin areas. The five margin areas are the five important tourism economic development axes in Shenyang Economic Zone. They can be driven by the core city Shenyang, and form the integration of regional tourism resources. It is necessary to strengthen the development of tourism resources in five margin areas, on the basis of strategy spatial development pattern, and integrate the regional tourism resources of Shen – Tie, Shen – Fu, Shen – Ben, Shen – Fu, and Shen – Liao – An – Ying, which can jointly promote the development and formation of "one core, five margins" layout, and take Shenyang Economic Zone as the regional tourism shield in order to lead the development of marginal cities.

It is necessary to develop the unique characteristics of the regional tourism resources, make potential tourism advantages conditions to get more reasonable development of the tourism resources, take advantage of potential tourism resources, and strengthen the interactive association to drive the development of regional cooperation to form tourism resources integration, which can achieve reasonable development.

2.2 Integrating the tourism products Regional tourism products in Shenyang Economic Zone, the red tourism, religious tourism, surrounding Hunhe river and urban leisure vacation, can all realize the integration of tourism products. Taking landscape tourism product system construction as the core, it is necessary to take the tourist famous brand as the goal to promote the integration of tourism resources and tourism product development. It can make Manchu and Qing culture tourism products brand to get gradual attention, and make tourism products form regional features. We can gradually build the tourism product of Shenyang Qipan Mountain, Benxi Guanmenshan Mountain, and Benxi water tunnel, take the Shenyang development zone leisure vacation, Fushun Lei Feng memorial hall – the cultural tourism products as the key products, take Qing culture tourism, Manchu customs tourism, red education tourism, eco-tourism, and coastal tourism, the five colors tourism products as the feature, take hot springs in Anshan, Benxi maple leaf, Tieling folk art, Shenyang fantastic Ice and Snow Festival as the special important tourism products, and take the off-season, shoulder season, and night tour tourism products as complement to form the tourism productssystem. Integrating special tourism products together in Shenyang Economic Zone can increase the competitiveness in the development of Shenyang Economic Zone in the national regional zones.

2.3 Emphasizing main resources and creating tourism resource development level structure For reasonably positioning tourism function and optimizing the structure of development level, it is necessary to divide the Shenyang Economic Zone into the basic tourism functional zone, the secondary tourism functional zone, the developing tourism functional zone, and potential tourism functional zone, etc. According to the classification, Shenyang as the first-class city has obvious tourism resources and geographical advantages. So as the key tourism functional zone, Shenyang should vigorously develop regional core products and superior products, and secondary tourism functional zone should focus on Fushun, Liaoning, and Tieling, these three cities, which should emphasize developing secondary tourism resources, and form regional cooperation strategy of "Shen – Fu, Shen – Tie". The above three cities have rich tourism resources, and under the first-class city Shenyang integration layout, the secondary tourism functional zone can make auxiliary development, carry out the basic resources construction, maintain the stability of tourism resources in Shenyang Economic Zone. Fuxin and Liaoyang lack regional tourism resources, and there is a need to increase the development level, and implement tourism resources development of "Shen – Fu, Shen – Liao" construction[7]. Benxi, Anshan, Yingkou are in potential tourism functional area, and we should develop various potential tourism products for different tourism markets. Yingkou has big value of marine resources, and we can develop the coastal tourism and tourism products. Benxi is a landscape ecological tourist city surrounded by mountains, and we can develop ecological landscape tourism products. The four functional zones can share tourism resources, complement each other's advantages, and cooperate mutually with each other, which can promote good and fast tourism product development in Shenyang Economic Zone.

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