

A Study on the Differences in the Development of Tourism Economy in County Areas in Dabie Mountain Pilot Area

Gao Yanjing, Ye Jun

School of geography and tourism, Huanggang Normal University, Huanggang, Hubei, China

Abstract:

The difference of regional tourism economic development is a common problem in many regions. It is of great significance to study the differences in the development of county tourism economy in the Dabie Mountain pilot area to realize the coordinated and balanced development of county tourism economy. In this study, 16 counties in the Dabie Mountain pilot area were selected as the research objects, and the tourism economy-related data of these 16 counties (urban areas) in 2019 were selected. Through principal component analysis and cluster analysis, 16 counties in the Dabieshan experimental area were classified and evaluated comprehensively. The results show that Huangpi District is a developed area of tourism economy; Macheng, Hong'an, Yingshan, Luotian and Huangzhou are relatively economically developed areas; Guangshui, Anlu, Wuxue, Dawu, Xiaochang, Xishui, Huangmei and Tuanfeng are underdeveloped areas of tourism economy; Xinzhou and Qichun are areas with backward tourism economy. Finally, some suggestions are given from the aspects of strengthening regional tourism cooperation, exerting resource advantages to improve tourism service level, developing county characteristics to build tourism brands, developing rural tourism to promote agricultural tourism cooperation, and integrating marketing to enhance tourism image.

Keywords: County tourism economy, Development difference, Dabieshan experimental area.

I. INTRODUCTION

The Dabie Mountain Revolutionary Old Area Economic and Social Development Experimental Zone (hereinafter referred to as the "Dabie Mountain Experimental Zone") was established in February 2011, including Huangpi District and Xinzhou District in Wuhan City, all counties and cities under the jurisdiction of Huanggang City, and Dawu County under Xiaogan City, Anlu City, Shuangfeng Mountain Scenic Area and Xiaochang County, and Guangshui City in Suizhou, a total of 18 counties (cities, districts). The Dabie Mountains test area is mostly mountainous. It is one of the most impoverished areas in my country, with backward infrastructure and low per capita income of local residents. The tourism resources are relatively rich, and the tourism industry in each county has developed to a certain extent. However, due to the constraints of terrain and traffic conditions, the development of tourism economy in each county is significantly different [1]. In order to promote comprehensive poverty alleviation and rapid economic

development in the Dabie Mountains Pilot Area, The Hubei Provincial Government issued the "Construction Plan for the Economic and Social Development Pilot Zone in the Old Revolutionary Areas of Hubei Dabie Mountain (2011-2020)". The implementation of the plan has been completed. Has the development difference of county tourism economy in Dabie Mountain Pilot Zone been weakened, and whether coordinated and balanced development has been achieved? This study conducts related research and analysis based on this issue.

The research on the unbalanced development of regional tourism economy has always been a hot topic in academic circles. The county-level tourism economy research is mostly carried out around the county-level tourism economy development path [2], development model [3-4], development potential evaluation [5], temporal and spatial differences [6-8], and influencing factors [9-10]. The research methods are mostly qualitative analysis, exploratory spatial data analysis, standard deviation, coefficient of variation, Gini coefficient, Findal coefficient, social network analysis, GIS and factor analysis. Based on the previous research results, the author took the 16 counties (districts) of the Dabie Mountain experiment as the basic research unit, and selected a series of relevant indicators. Constructing the evaluation index system of county tourism economic development, using SPSS data processing software to carry out principal component factor analysis and cluster analysis, quantitatively analyzing the difference of county tourism economic development in Dabie Mountain pilot area, and put forward corresponding countermeasures and suggestions on this basis, in order to improve Narrowing the differences in tourism economy between counties, It is of reference significance to promote the coordinated and sustainable development of county tourism.

II. CONSTRUCTION OF THE INDEX SYSTEM OF COUNTY TOURISM ECONOMIC DEVELOPMENT

At present, there are many indicators used by academia to evaluate the development level of tourism economy. Considering the scientific nature, relevance of indicators and the difficulty of data acquisition, this paper selects 10 indicators for tourism economy based on reference and reference to previous research results. The development of relatively obvious indicators to establish the evaluation index system of this paper: X1 tourism revenue, X2 tourism revenue growth rate, X3 tourism reception number, X4 tourism reception number growth rate, X5 tourism revenue as a percentage of GDP, X6 number of four-star and above hotels, X7 total number of star hotels, X8 4A and above scenic spots The total number of X9 A-level scenic spots and the number of X10 travel agencies are used to evaluate and analyze the comprehensive situation of tourism economic development in the 16 counties in the Dabie Mountain Pilot Area. And according to this, the tourism economic development status of these 16 counties (cities, districts) is objectively classified.

III. RESEARCH METHODS AND DATA SOURCES

Since there are many variables in the index system, it will increase the amount of calculation and the complexity of the analysis problem, so the principal component analysis method used in this paper is actually a dimensionality reduction method. into another set of uncorrelated variables, these new variables

are arranged in order of decreasing variance, A comprehensive indicator of data interpretation through a few independent or uncorrelated new variables (the so-called principal components). Cluster analysis is an ideal multivariate statistical technique and a multivariate statistical method to study classification. Due to the particularity of the Shuangfeng Mountain Scenic Area and the Longgan Lake Management Area, there is no complete statistics on tourism economy related data. Therefore, the research object of this study does not include these two areas. In this paper, the data processing software SPSS software will be used, and the method of multivariate statistics (principal component factor analysis and cluster analysis) will be used to analyze the cross-section of 16 counties (cities, districts) in the Dabie Mountain pilot area in 2019 (the data in 2020 is incomplete). Take the data as an example to measure the difference of county tourism economy. The data for this article are mainly from: ① "Hubei Tourism Statistical Yearbook 2019", "Huanggang City 2019 Statistical Yearbook", "Hubei Province Relevant Counties and Cities 2019 Statistical Yearbook", 2019 National Economic and Social Development Statistical Bulletin of relevant counties and cities in this article; ② "2019 List of Star-rated Hotels in Hubei Province" ③ Tourism bureau websites and people's government websites of relevant counties and cities.

IV. ANALYSIS ON DIFFERENCES OF TOURISM ECONOMIC DEVELOPMENT IN DABIE MOUNTAIN COUNTY

4.1 Principal Component Analysis

4.1.1 Standardization of raw data

This paper uses SPSS software to standardize the data of various indicators in 2019 in 16 counties (cities, districts) in the Dabie Mountain Pilot Area (Table I).

TABLE I. Data Normalization

County area	Z tourism revenue	Z tourism revenue growth rate	Z tourism revenue as a percentage of GDP	Z travel reception	Z growth rate of tourist arrivals	Z four-star and above hotels	Total number of Z-star hotels	Number of Z4A and above scenic spots	The total number of ZA-level scenic spots	Z number of travel agencies
Wuxue	-0.259	0.050	-0.515	-0.630	-2.921	-0.582	-0.378	-1.023	-0.350	1.491
Macheng	0.411	0.089	-0.140	0.362	0.303	1.111	0.570	0.961	0.535	0.122
Tuanfeng	-0.789	0.330	-0.451	-0.601	-1.405	-1.005	-0.970	-1.023	-1.235	-0.953
Huangzhou	-0.149	1.061	0.897	3.182	-0.307	0.688	-0.022	-0.031	1.124	-0.171
Qichun	-0.689	-3.533	-0.786	-0.312	0.812	-1.005	-0.496	-0.031	1.419	-0.660
Yingshan	0.715	0.566	2.656	-0.041	0.381	0.688	0.333	-0.031	0.240	-0.464
Hong'an	0.400	0.351	0.756	0.046	0.308	-0.582	-0.733	0.961	0.535	1.491
Luotian	0.585	0.261	1.546	-0.037	0.337	1.111	0.333	-0.031	0.240	-0.758
Xishui	-0.403	0.501	-0.470	-0.566	0.011	-0.582	-0.733	-0.527	-0.350	-1.051
Huangmei	-0.384	0.334	0.062	-0.537	0.163	0.688	0.096	-0.031	-0.645	-0.856
Xinzhou	-0.674	0.155	-1.063	0.064	1.540	-0.159	2.940	-0.527	-1.235	1.198

Huangpi	3.256	-0.181	0.071	1.377	-0.140	2.381	1.281	2.946	2.304	1.980
Guangshui	-0.087	-0.186	-0.450	-0.409	0.012	-1.005	-0.141	-1.023	-0.940	0.024
Xiaochang	-0.674	-0.304	-0.835	-0.619	-0.190	-1.005	-0.852	0.465	-0.350	-0.856
Dawu	-0.702	0.463	-0.628	-0.602	0.895	-0.582	-0.970	-0.527	-0.350	-0.660
Anlu	-0.558	0.042	-0.649	-0.679	0.200	-0.159	-0.259	-0.527	-0.940	0.122

4.1.2 Extraction and calculation of principal components

By using SPSS software to calculate the correlation coefficient between variables and the initial eigenvalue, variance percentage and cumulative contribution rate of each variable index, and according to the principle that the initial eigenvalue of the index is greater than 1 and the cumulative variance contribution rate of some indicators exceeds 80%. Extract the principal components. As can be seen from Table II, the initial eigenvalues of the first three factors become 4.679, 1.623 and 1.412, The proportion of variance is 46.787%, 18.230% and 16.117% respectively. There are three variable indicators whose initial eigenvalue is larger than 1, and the cumulative contribution rate of their variance is 81.134%, which is greater than 80%. Therefore, selecting these three principal components can explain most of the information transmitted by the original indicators.

TABLE II. Total Variance Explained

Element	Initial eigenvalues			Extract the load sum of squares		
	total	percent variance	Cumulative %	total	percent variance	Cumulative %
1	4.679	46.787	46.787	4.679	46.787	46.787
2	1.623	18.23	65.017	1.623	18.23	65.017
3	1.412	16.117	81.134	1.412	16.117	81.134
4	0.931	9.113	90.247			
5	0.655	4.252	94.499			
6	0.455	2.182	96.681			
7	0.364	1.538	98.219			
8	0.081	0.799	99.018			
9	0.074	0.712	99.73			
10	0.027	0.27	100			

Extraction method: principal component analysis.

TABLE III. Principal Component Factor Loading

	Element		
	1	2	3
Zscore (tourism revenue (billion)) X1	.419	.001	-.091

Zscore (tourism revenue growth rate) X2	.059	.688	.244
Zscore (tourism revenue as a percentage of GDP) X3	.222	.452	-.189
Zscore (tourism reception (10,000)) X4	.324	.147	-.050
Zscore (the growth rate of tourist arrivals) X5	.072	-.288	.374
Zscore (four-star and above hotels) X6	.237	-.109	.660
Zscore (total number of star-rated hotels) X7	.365	-.237	-.406
Zscore (number of 4A and above scenic spots) X8	.396	-.214	-.126
Zscore (total number of A-level scenic spots) X9	.409	.153	.089
Zscore (number of travel agencies) X10	.250	-.136	.241

Extraction method: principal component analysis.

a. Three principal components have been extracted

In order to make the extracted principal component index more directly reflect the information contained in the initial index, the principal component factor loading table III is obtained by orthogonal rotation. It can be seen from Table III that the first principal component factor has a relatively high load on the indicators of tourism revenue, the total number of star-rated hotels, the number of 4A and above-level scenic spots, and the total number of A-level scenic spots. It shows that the first principal component factor reflects the level of tourism economic development; the second principal component factor has a higher load on the growth rate of tourism revenue and the proportion of tourism revenue in GDP, indicating that the second principal component factor reflects the scale of tourism economic development; The third principal component factor has a higher load on the growth rate of tourist arrivals and the number of four-star and above hotels. It shows that the third principal component factor reflects the tourism reception ability.

The weighted summation of the variance contribution proportions of the above three main factors is used to obtain the comprehensive score (F) of the tourism economic strength of each county in the Dabie Mountain Pilot Area.

Its calculation formula is:

$$F=0.46787 \times F_1 + 0.18230 \times F_2 + 0.16117 \times F_3$$

The calculation formula is brought into the original data standardization table I above, so as to

calculate the scores of each principal component and the comprehensive score F, and arrange them in descending order according to the comprehensive score F of the components. The sorting results are shown in Table IV below.

TABLE IV. Comprehensive Evaluation and Ranking of County Tourism Economy in the Dabie Mountain Pilot Area

City, county and district	The first principal component F1	The second principal component F2	The third principal component F3	Ingredient composite score F	sort
Wuxue	-1.08521	0.66647	-0.70278	-0.64461	11
Macheng	1.38664	-0.43293	0.56318	0.82422	6
Tuanfeng	-2.44739	0.83877	-0.73781	-1.19833	14
Huangzhou	1.76909	1.82356	0.35343	2.30008	2
Qichun	-0.73154	-2.52703	-0.82123	-2.65156	16
Yingshan	1.19242	1.42750	-0.05086	1.44475	3
Hong'an	0.95956	0.41195	0.21910	0.89455	5
Luotian	0.89845	0.72295	0.28745	1.12362	4
Xishui	-1.44593	0.48557	-0.02339	-0.37978	9
Huangmei	-0.58169	0.05807	0.34803	0.04797	7
Xinzhou	0.24109	-1.72700	-0.18192	-1.15765	13
Huangpi	5.44123	-0.95830	0.88442	2.64029	1
Guangshui	-1.35207	-0.17968	-0.48242	-1.14082	12
Xiaochang	-1.42246	-0.34936	-0.50809	-1.30491	15
Dawu	-1.54588	0.13044	0.54767	-0.19411	8
Anlu	-1.27632	-0.39095	0.30522	-0.60370	10

4.2 Cluster Analysis

In order to deeply analyze the tourism economic development level of each county in the Dabie Mountain pilot area, three principal components were used as variables, the class spacing was determined by the squared Euclidean distance, and the samples were clustered by the clustering method of inter-group connection. The 16 counties (cities, districts) under the pilot area are divided into four categories according to the level of tourism economic development: Huangpi District is a separate category, Areas with developed tourism economy; Macheng City, Hong'an County, Yingshan County, Luotian County and

Huangzhou District are one category with relatively developed economies; Guangshui City, Anlu City, Wuxue City, Dawu County, Xiaochang County, Xi Shui County, Huangmei County and Tuanfeng County belong to one category, and the tourism economy is underdeveloped; Xinzhou District and Qichun County belong to the category, and the tourism economy is backward.

4.2.1 Tourism and economically developed areas

The area with developed tourism economy is Huangpi District. The main component of Huangpi District has the highest comprehensive score and ranks first, and the comprehensive score far exceeds that of other counties (cities, districts), indicating that the tourism economy development level of Huangpi District is relatively high.

Wuhan City, as the center of politics, economy, science and education, culture, commerce and finance in Central China, is the central city of my country. Huangpi District is under the jurisdiction of Wuhan City and is rich in tourism resources, including Panlong City, a Shang Dynasty site, Sushan Temple National Forest Park, Mulan Cultural Ecological Tourism Zone, Lutai Shuangfeng Pavilion and many other historical sites and cultural landscapes. It has three-dimensional transportation facilities. In the area, there are Heshui River connected to Fu River and Yangtze River by shipping, and the advantages of water transportation are obvious; there are urban highways, national highways, outer ring roads, and highways for convenient road transportation; Beijing-Guangzhou, Beijing-Kowloon Convenient railway transportation such as Beijing-Guangzhou-Wu-Ma Link; near Wuhan Railway Station and Tianhe Airport, The light rail and subway in the region are also under construction and improvement, forming a three-dimensional transportation network of "water, land and air".

Huangpi District is not only rich in tourism resources, but also has superior traffic conditions. Relying on the drive of Wuhan economic circle, the growth rate of tourism revenue and the proportion of tourism revenue in GDP are both more than 10%, and the development trend of tourism economy is good.

4.2.2 Areas with more developed tourism economy

The regions with more developed tourism economy are Macheng City, Hong'an County, Yingshan County, Luotian County and Huangzhou District.

Macheng City, Hong'an County, Yingshan County, Luotian County and Huangzhou District have higher data on the first principal component, indicating that their tourism economy development level is higher. In 2019, the tourism revenue of these five counties (cities, districts) was 5.42 billion, 5.381 billion, 6.52 billion, 6.05 billion and 3.398 billion respectively, a year-on-year increase of 16%, 22%, 27%, 20% and 39%. Economic development is in good shape. And these five counties are rich in tourism resources and diverse in types. And the scenic spot has a high level, and the quality of tourism resources is good. These counties have many high-star tourist attractions and high-quality tourism resources, which not only enhances the local popularity, but also promotes the development of the local tourism economy to a certain

extent. Macheng, through the unique ancient rhododendron community as a tourism resource and better publicity and marketing. The popularity has increased rapidly at home and abroad, and the tourism economy has developed rapidly; Hong'an County, by grasping the opportunity of red tourism and relying on its resource advantages, also promotes the rapid development of the tourism economy. Yingshan County will give full play to the advantages of local tourism resources, develop hot spring health preservation, canyon rafting, folk customs, etc., and the tourism industry has developed well. Luotian County's tourism revenue is 2.45 billion, and the number of tourists has reached 4.65 million, and both maintain a growth rate of more than 20%, and the development trend is good. Huangzhou District has continuously explored Dongpo culture with the help of Dongpo's hometown and built a Dongpo cultural brand. The five counties (cities, districts) are rich in tourism resources, have great potential for development, and have good prospects for the development of tourism economy.

4.2.3 Underdeveloped tourist areas

Guangshui City, Anlu City, Wuxue City, Dawu County, Xiaochang County, Xishui County, Huangmei County and Tuanfeng County are areas with underdeveloped tourism economy. The first principal components of Dawu County, Wuxue City, Xishui County, Huangmei County and Tuanfeng County are all negative numbers, the first and second principal components of Anlu City are all negative numbers, and the three principal components of Guangshui City and Xiaochang County are all negative numbers is a negative number, In addition to Huangmei County, the other 7 counties (cities, districts) have a comprehensive score of less than 0. The tourism revenue of Guangshui City, Anlu City, Wuxue City, Dawu County, Xiaochang County, Xishui County, Huangmei County, and Tuanfeng County in 2019 was 3.622 billion and 1.92 billion respectively, 3 billion, 1.4 billion, 1.5 billion, 2.48 billion, 2.547 billion and 1.085 billion, the total number of four-star and above hotels and AAAA and above scenic spots are 9 and 8 respectively. It shows that these 8 counties (cities, districts) have a relatively low level of development of tourism industry scale, lack of tourism infrastructure, fewer tourist attractions, and weak competitiveness of tourism resources, making it difficult to form a brand effect.

4.2.4 Tourism economy backward areas

Xinzhou District and Qichun County belong to the backward areas of tourism economy. The second and third principal components of these two counties (cities, districts) are negative, and the comprehensive scores are low, ranking low. In 2019, the tourism revenue of Wuxue City and Qichun County was 1.446 billion and 1.5 billion respectively, the proportion of tourism revenue to GDP was 2% and 5% respectively, and the number of tourist receptions was 11 million and 6.074 million respectively. There are only 2 four-star and above hotels, and 1 and 2 4A and above tourist attractions respectively. It can be seen that Xinzhou District and Qichun County have limited tourism resources, backward tourism infrastructure, slow development of tourism economy, and weak overall strength.

V. SUGGESTIONS FOR THE COORDINATED DEVELOPMENT OF COUNTY TOURISM ECONOMY IN DABIE MOUNTAIN PILOT AREA

5.1 Strengthening Organizational Leadership and Close County Tourism Cooperation

There are still big differences in the development of tourism economy in the counties of the Dabie Mountain pilot area, and the development level of some counties (urban areas) is still low, which is very unfavorable for promoting the process of regional integration and coordinated development. Due to its vast territory, the Dabie Mountain Pilot Area covers many administrative districts and counties, lacks the awareness of county tourism cooperation, and makes cooperation more difficult. Therefore, the Hubei provincial government still needs to take the lead in organizing and coordinating county tourism cooperation, introduce relevant policies, innovate administrative management systems and mechanisms, continue to improve infrastructure construction, speed up industrial restructuring, cultivate industrial clusters, and actively develop tourism and other related service industries. All counties should actively implement the relevant policies of the Hubei Provincial Government to achieve in-depth cooperation. Ultimately, resource complementarity, coordinated development, and win-win cooperation are achieved.

5.2 Dig Deep into County Characteristics and Improve Tourism Brand Tension

Brand tension refers to the influence and value of a brand in the market, which is manifested in brand awareness, loyalty, market share, brand image, ability to maintain premium, and ability to transcend geographic and cultural boundaries. Tourism brand is an important factor to attract tourists. The higher the popularity of tourism products, the greater the attraction to tourists. For example, Macheng has built Macheng Rhododendron into an internationally renowned tourism brand through "April in the world, Macheng sees azaleas", which has led to the development of Macheng's tourism economy and the improvement of tourism status. The tourism of each county in the pilot area has its own characteristics, but the brand influence in the market is far from enough. Therefore, to understand the context of the county, dig deep into the characteristics of the county. To improve the tension of tourism brand can better and faster promote the development of county tourism economy.

5.3 Develop Rural Tourism in an All-Round Way and Promote Cooperation between Agriculture and Tourism

The development of tourism can effectively increase the income of a region. At present, the development of domestic rural tourism is in full swing. The combination of tourism and agriculture, especially the combination of agriculture, rural areas and farmers and tourism in rural areas, is not only conducive to the improvement of infrastructure in rural areas and the improvement of per capita income levels, but also it can promote the development of rural tourism economy and the process of urban-rural integration, which is one of the effective ways to coordinate the differences in the development of county tourism economy. The rural economy in the subordinate counties (districts) of the Dabie Mountain Pilot Area is relatively backward, although many rural areas are already developing rural tourism, However, the

tourism infrastructure is still imperfect, the local residents have poor service awareness, less residents participate, the number of employed people is limited, and the overall economic driving effect is weak. Therefore, it is necessary to continue to improve the construction of rural tourism infrastructure, including transportation, accommodation, catering, shopping, etc.; continue to improve the service awareness and participation of local residents, Taking the local residents' life and the originality of the rural environment as a selling point, creating characteristic products of rural tourism; transforming agricultural landscapes, agricultural production processes and agricultural products, transforming farming culture into tourism resources, and promoting the integrated development of agriculture and tourism.

5.4 Integrate Marketing Channels to Enhance Tourism Image

The integration of marketing channels refers to the use of systematic theory and methods to integrate all the marketing means of an enterprise, to formulate marketing plans and influence events that conform to the current situation of the enterprise's development, so as to enhance the core competitiveness of the enterprise. Dabie Mountain Pilot Area should innovate boldly among the counties to promote the integration and upgrading of marketing methods and channels. Formulate appropriate tourism marketing themes and marketing events, combine local actual conditions and characteristics of tourism resources to excavate characteristic tourism culture, and carry out characteristic tourism activities. At the same time, all counties and urban areas cooperate with each other, actively use various new media to strengthen publicity, enhance popularity and network image, create characteristic cultural tourism products, and promote the rapid development of county tourism economy.

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