Research on Tourism Competitiveness Evaluation of the Wanjiang City Belt Based on SPSS Analysis

WenYan Wang[1], JinSheng Fang[1(✉)], XueXia Wu[2], Ying Xiong[1], Yang Liu[1], and XinWang Xu[1]

[1] The Department of Education, Chizhou Vocational and Technical College, Chizhou 247000, China
654705019@qq.com

[2] Chizhou Household Economic Status Check Center, Chizhou 247000, China

Abstract. According to the connotation and influencing factors of urban tourism competitiveness, the urban tourism competitiveness evaluation system is constructed from the dimensions of resource support, environmental support, economic support, service support and performance development, based on the 2019 data of the 5 cities—Anqing, Chizhou, Tongling, Wuhu and Ma'anshan along Long River in Anhui, using SPSS analysis method for quantitative analysis. The results show that The overall scores of the tourism competitiveness of the 5 cities in descending order are Anqing, Wuhu, Chizhou, Ma'anshan, and Tongling, with scores of 7.052753, 6.12136, 5.382279, 2.921913, and -0.18253, respectively. For improving the contribution of tourism industry to regional economic development, it is proposed to build the concept of integration of the Yangtze River Economic Belt, and enhance the overall competitiveness of tourism in terms of the development of advanced tourism routes, high-quality development with regional characteristics, the creation of smart tourism platforms, and the construction of tourism talent teams.

Keywords: SPSS Analysis Method · Tourism Competitiveness · Evaluation · Indication System · Wanjiang Cities

1 Introduction

With the rapid social and economic development nowadays, people's living standards are improving, and disposable income is rising year by year. Tourism is one of people's common lifestyles, and tourism industry has accordingly become the world's largest industry, and an important pillar of economic and social development. Due to the significance of local tourism to regional development, various places strive to optimize resource allocation, upgrade industrial structure, and enhance the comprehensive competitiveness of urban tourism industry to drive the high-quality development of urban economy.

2   Urban Tourism Competitiveness

In the 1980s, after the American scholar, Michael Porter, constructed a relatively complete theory of competitive advantage, tourism competitiveness attracted tremendous attention and became the focus of research by industry experts. Foreign scholars primarily carry out theoretical research on tourism competitiveness based on sustainable development from the perspectives of system and strategy [5], and conduct empirical research from the perspectives of tourism supply and demand, tourism marketing and management, etc. [2, 8]. In the 1990s, with the acceleration of global economic integration, the rapid progress of China's tourism industry, the increasingly fierce competition, and the frequent exchanges between domestic and foreign academics, Chinese scholars began to study tourism competitiveness. The research mainly focused on the evaluation of urban tourism competitiveness [3, 4, 11, 15, 17] and the promotion of urban tourism competitiveness [10, 13].

The research of tourism competitiveness over the past 40 years has yielded fruitful research results in theory and practice. Many research results show that urban tourism competitiveness embodies the dual attributes of tourism industry competitiveness and urban competitiveness. Owing to the comprehensive action of urban economy, politics, culture, society, ecology and other factors, it stimulates the high-quality and sustainable development of urban economy and society while taking the sales of urban tourism products as an approving and being reflected in the market share of urban tourism industry [14]. Under the guidance of modern tourism concept, the transformation and cross-border integration of tourists' demand, tourism mode, consumption pattern and industrial chain promote the research of tourism competitiveness to be more detailed, deepened and diversified. As the tourism develops quickly and the market competition becomes increasingly fierce, promoting high-quality sustainable development of tourism is essential to cultivate, create and enhance tourism competitiveness.

3   Overview of the Research Area

The Yangtze River flows through Anhui for 416km, which is known as the "800-li Wanjiang". The five cities along the Yangtze River, namely, Anqing, Chizhou, Tongling, Wuhu and Ma'anshan (from west to east), are the principal places of industrial transfer demonstration zones in the Wanjiang City Belt. It has a total area of 35,200 km2, accounting for 25.18% of the province. The results of the seventh national census show that its resident population is 13,141,900, accounting for 21.53% of the province. The GDP in 2020 is 1,028,022 billion yuan, accounting for 26.58% of the province. The total tourism revenue in 2019 reached 311.678 billion yuan, accounting for 36.56% of the province.

From the research practice of urban tourism competitiveness, the Wanjiang City Belt, as an important part of the Yangtze River Delta region, should give priority to protection, develop ecological tourism, and strengthen the competitiveness of urban tourism to achieve high-quality economic development. It is one of the driving forces to promote the development of the Yangtze River Economic Belt in Anhui Province, a key strategic measure to realize the rise of Anhui Province, and the foundation for

the tourism of Yangtze River Delta region to face the world and the future. Therefore, it is of vital theoretical and practical significance to establish a set of practice-tested evaluation indexes, make a scientific and reasonable prediction and evaluation on the tourism competitiveness of the Wanjiang City Belt, explore its restrictive factors, and put forward cooperative promotion strategies to facilitate the rapid, stable and high-quality tourism development in Wanjiang City.

4 Index System Construction of Urban Tourism Competitiveness

The scientific evaluation and analysis of urban tourism competitiveness can provide decision-makers with an operational quantitative basis. Meanwhile, it is particularly significant to select indexes to construct a system, which is directly associated with the accuracy, objectivity, scientificity and pertinence of decision-making.

4.1 Construction Path of Index System

The connotation of urban tourism competitiveness is extensive. It is a systematic project involving urban economy, society, culture, education, natural environment and other aspects. Moreover, it is influenced by urban conditions, with its influencing factors shifting with different stages of social development. When constructing the evaluation index system, we should comprehensively consider and study the influencing factors of urban tourism competitiveness at the present stage and its connotation, make the evaluation index fully reflect the characteristics of regional tourism and the demand characteristics of tourism development in the new era, and make the constructed index system complete, reasonable and effective to achieve the goal of scientific evaluation of urban tourism competitiveness.

Based on the analysis of relevant literature and reference to the classic model of competitiveness evaluation, the evaluation index system of tourism competitiveness of the Wanjiang City Belt in this research is constructed by mainly adopting the quantitative analysis method, and combining it with the qualitative analysis method. The general idea of system construction is to analyze the influencing factors of urban tourism competi-tiveness, identify the research area, collect the tourism-related data of the research area, explore its development status and existing problems of tourism competitiveness, screen and determine the evaluation indexes, construct the evaluation index system, collect and sort out the relevant data, conduct SPSS software analysis (factor analysis), calcu-late results, carry out analysis and evaluation, and finally put forward the cooperative promotion strategy.

4.2 Index Selection and System Construction

While abiding by the general principles of comprehensive, available and forward-looking index system construction, the pre-selected indexes are repeatedly discussed, analyzed, judged and screened to construct the evaluation index system of urban tourism com-petitiveness in combination with the characteristics of urban tourism system and the influencing factors, so that the evaluation system is reasonable and comprehensive. In

this way, it can not only reflects the present situation and characteristics of urban tourism competitiveness, but also manifests the government's efforts in urban tourism construction and its sustainable development ability. The evaluation index system is divided into three levels: target level (A), criterion level (B) and index level (C). The overall goal is the urban tourism competitiveness. The criterion level includes resource support degree, environmental support degree, economic support degree, service support degree and performance development degree. On this basis, 34 indexes are selected to form the index layer [7, 9, 12, 20], as shown in Table 1.

Table 1. Evaluation Index System of Urban Tourism Competitiveness.

Target Level (A)	Criterion Level (B)	Index Level (C)	Index Connotation and Calculation Method
Urban tourism competitiveness (A)	B1 Resource support degree	C1 Appreciation degree of tourism degree	Evaluate the tourism resources in the region from the appreciation and recreation value, or the scientific, cultural and artistic value [19] through expert consultation method.
		C2 Abundance of tourism resources //(/ km^2)	$F = (9R_5 + 8.5R_4 + 7.5R_3 + 6R_2 + 5R_1)/S$ and F are the abundance of tourism resources; R5, R4, R3, R2 and R1 are the number of scenic spots of 5A, 4A, 3A, 2A and 1A in the region respectively; S is the area of the region [16].
		C3 Number of nature reserves //Individual unit	Number of nature reserves above municipal level in the region
		C4 Number of scenic spots //Individual unit	Number of scenic spots above Grade 1A in the region
		C5 Cultural relics protection units above provincial level //Individual unit	Number of cultural relics protection units above provincial level in the region
	B2 Environmental support degree	C6 Green coverage rate in the built-up area //%	Green coverage area in the built-up area/land area in built-up area $\times$ 100%
		C7 Forest coverage rate //%	(Area of arbor forest + area of bamboo forest + area of special shrub forest)/Total land area $\times$ 100%

(continued)

Table 1. (*continued*)

Target Level (A)	Criterion Level (B)	Index Level (C)	Index Connotation and Calculation Method
		C8 Per capita park green area //(m^2/ person)	Park green space/urban population
		C9 Excellent rate of air quality //%	Days when the air quality reaches the standards of Grade II (good) and above /365 × 100%
		C10 Urban domestic sewage treatment rate //%	Urban domestic sewage treatment capacity/total urban domestic sewage discharge × 100%
		C11 Comprehensive utilization rate of industrial waste //%	Comprehensive utilization amount of industrial solid waste/(production amount of industrial solid waste + storage amount of comprehensive utilization in previous years) × 100%
		C12 Harmless treatment rate of domestic garbage //%	Harmless treatment capacity of domestic garbage/Total domestic waste × 100%
	B3 Economic support degree	C13 Per capita GDP //yuan	Gross domestic product per capita, i.e. total output (total output of social products and services)/total population
		C14 Average GDP growth rate in recent five years //%	[(GDP in 2019/GDP in 2015)$^{1/4}$–1] × 100%
		C15 Per capita disposable income of residents //yuan	Disposable income of residents
		C16 Contribution rate of tertiary industry //%	Annual increment of tertiary industry/annual increment of GDP × 100%
		C17 Population urbanization rate //%	Urban population/total population × 100%
		C18 Annual fiscal revenue // 100 million yuan	Including central fiscal revenue and local fiscal revenue.

Table 1. (*continued*)

Target Level (A)	Criterion Level (B)	Index Level (C)	Index Connotation and Calculation Method
	B4 Service support degree	C19 Number of star-rated hotels // Individual unit	Number of hotels above one-star level in the region
		C20 Number of tourism agencies // Individual unit	Number of registered tourism agencies operating normally in the region
		C21 Proportion of employees in tertiary industry //%	Number of employees in tertiary industry/total number of employees × 100%
		C22 Total annual passenger transport //10,000 people	Actual number of passengers carried by various means of transport during the year
		C23 Railway operation mileage //km	Mileage of passenger or freight rail in the region
		C24 Graded highway mileage //km	Mileage of highway that reaches the grade of highway prescribed by the state and has been officially accepted by the highway department
		C25 Annual passenger throughput of civil aviation //person	Number of passengers entering and leaving by air
		C26 Internet penetration rate //%	Number of Internet users in the region/total resident population in the region × 100%
	B5 Performance development degree	C27 Domestic tourism revenue //100 million yuan	Revenue from domestic tourism business
		C28 Average growth rate of domestic tourism revenue in recent five years //%	[(Domestic tourism revenue in 2019/domestic tourism revenue in 2015) $^{1/4}$–1] × 100%
		C29 Number of domestic tourists //10,000 people	Number of domestic tourists received by the region
		C30 Average growth rate of domestic tourists in recent five years //%	[(Number of domestic tourists in 2019/number of domestic tourists in 2015) $^{1/4}$–1] × 100%

Table 1. (*continued*)

Target Level (A)	Criterion Level (B)	Index Level (C)	Index Connotation and Calculation Method
		C31 International tourism revenue //billion yuan	Revenue from inbound tourism business
		C32 Average growth rate of international tourism revenue in recent five years //%	[(International tourism revenue in 2019/international tourism revenue in 2015) $^{1/4}$–1] × 100%
		C33 Number of international tourists //10,000 people	Number of international tourists received in the region
		C34 Average growth rate of international tourists in recent five years //%	[(Number of international tourists in 2019/number of international tourists in 2015) $^{1/4}$–1] × 100%

5 Quantitative Analysis and Evaluation of Tourism Competitiveness of the Wanjiang City Belt

5.1 Data Sources

The quantitative index data comes from Anhui Statistical Yearbook-2020, the statistical publication of national economic and social development of five cities in 2019, Chinese Culture and Tourism Yearbook 2020, the publication of environmental quality status and the raw data collected by field investigation. The qualitative index data are obtained through investigation, analysis and expert consultation. The raw data of tourism competitiveness evaluation index of the Wanjiang City Belt in 2019 are shown in Table 2.

5.2 Principal Component Analysis

Based on the idea of descending dimension, simplifying complexity, reducing workload and enhancing work efficiency, the principal component analysis method of SPSS software with powerful functions and easy operation is employed for statistical analysis [6, 18]. Then, multiple indexes are converted into a small number of comprehensive indexes.

Each index unit in the constructed index system is distinctive. Before the principal component analysis, each index's raw data of five cities in the Wanjiang City Belt in 2019 are standardized, and the standardized data are imported into SPSS for principal component analysis. Finally, the eigenvalues and cumulative contribution rate of the index matrix are obtained, as presented in Table 3.

Table 2. Raw data of Tourism Competitiveness Evaluation Index of the Wanjiang City Belt (2019).

Index	Anqing	Chizhou	Tongling	Wuhu	Ma'anshan
C1	88	90.8	85.6	90.2	83.8
C2	0.0341	0.0365	0.0401	0.0440	0.0573
C3	5	6	1	0	0
C4	61	39	17	35	30
C5	115	68	34	47	32
C6	40.44	43.5	45.15	43.06	45.28
C7	39.29	60.16	25.32	36.31	37.72
C8	17.65	17.56	18.13	12.77	14.85
C9	75.30	76.90	80.80	71.80	70.70
C10	96.45	96.59	94.81	97.05	97.60
C11	91.68	94.91	85.44	73.64	94.66
C12	100	100	100	100	100
C13	50574	56217	58726	96154	89867
C14	11.19	9.91	7.43	11.20	11.49
C15	17731	24786	27794	35575	39783
C16	45.99	45.75	48.18	47.39	46.59
C17	49.98	54.90	57.20	66.41	69.12
C18	321.5	112.6	181.1	621.18	284.62
C19	35	21	4	27	12
C20	116	37	39	90	57
C21	35.2	39.9	44.6	49.4	49.8
C22	3582.29	1236	1429.6	3228	2688.2
C23	219	196.1	156	277.9	70
C24	20851	9385	4621	10831	7312
C25	592913	524471	0	0	0
C26	61.36	71.58	59.68	78.47	75.74
C27	805.2	801.2	211.38	849.5	355.0
C28	18.42	18.34	30.81	22.46	20.18
C29	7723.90	7110.30	2535.09	6594.52	7418.00
C30	14.65	14.78	23.64	19.54	32.74
C31	13.2	46.25	0.98	23.37	10.7
C32	10.61	6.91	22.87	20.73	51.14
C33	30.16	120.1	4.78	59.42	19.75
C34	9.21	8.33	13.90	19.23	11.83

Table 3. Eigenvalues and Cumulative Contribution Rate of the Index Matrix.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Sum	Variance%	Cumulative%	Sum	Variance%	Cumulative%	Sum	Variance%	Cumulative%
1	19.803	58.244	58.244	19.803	58.244	58.244	15.912	46.801	46.801
2	6.994	20.571	78.814	6.994	20.571	78.814	7.965	23.427	70.228
3	3.291	9.680	88.495	3.291	9.680	88.495	3.579	10.528	80.756
4	2.336	6.871	95.366	2.336	6.871	95.366	3.309	9.733	90.489
5	1.576	4.634	100.000	1.576	4.634	100.000	3.234	9.511	100.000
6	1.862E-15	5.477E-15	100.000						
7	1.313E-15	3.863E-15	100.000						
8	1.085E-15	3.192E-15	100.000						
9	9.248E-16	2.720E-15	100.000						
10	7.836E-16	2.305E-15	100.000						
11	6.268E-16	1.844E-15	100.000						
12	5.705E-16	1.678E-15	100.000						
13	4.289E-16	1.262E-15	100.000						
14	3.482E-16	1.024E-15	100.000						
15	2.244E-16	6.599E-16	100.000						
16	2.174E-16	6.394E-16	100.000						
17	1.242E-16	3.654E-16	100.000						
18	7.193E-17	2.116E-16	100.000						
19	3.772E-17	1.109E-16	100.000						
20	3.589E-18	1.055E-17	100.000						
21	−7.030E-17	−2.068E-16	100.000						
22	−1.281E-16	−3.767E-16	100.000						
23	−1.858E-16	−5.464E-16	100.000						
24	−2.287E-16	−6.728E-16	100.000						
25	−3.606E-16	−1.060E-15	100.000						
26	−3.968E-16	−1.167E-15	100.000						
27	−5.511E-16	−1.621E-15	100.000						
28	−6.379E-16	−1.876E-15	100.000						
29	−7.398E-16	−2.176E-15	100.000						
30	−7.538E-16	−2.217E-15	100.000						
31	−9.306E-16	−2.737E-15	100.000						
32	−1.089E-15	−3.202E-15	100.000						
33	−2.226E-15	−6.547E-15	100.000						
34	−4.323E-15	−1.271E-14	100.000						

It can be observed from Table 3 that the cumulative variance contribution rate of the first five principal components is nearly 100%, i.e., the factors of the first five components can explain almost 100% of the information in the data. Thus, these five principal components (recorded as F1, F2, F3, F4, F5) are extracted to represent (characterize) the initially selected 34 indexes, and then analyze the tourism competitiveness of the Wanjiang City Belt. The orthogonal rotation method with Kaiser standardization is adopted for component loading analysis, and the orthogonal rotation component matrix is obtained.

Furthermore, the regression analysis is applied to output the factor score coefficient, and get the component score coefficient matrix, as shown in Table 4.

Among the extracted first principal components in Table 3 and Table 4, the loading of green space coverage in the built-up area is the largest, so this first principal component can be used as the influencing factor of environmental support degree. Among the extracted second principal components, the loadings of the graded highway mileage, the number of tourism agencies, and the number of star-rated hotels are relatively larger, so the second principal components are taken as the influencing factors of service support degree. Among the extracted third principal components, the loadings of the international tourism revenue and the number of international tourists are relatively larger, so the third principal components are taken as the influencing factors of performance development degree. Among the extracted fourth principal components, the loadings of the railway operation mileage, cultural relics protection units above provincial level and the number of nature reserves are relatively larger, so the fourth principal components are taken as the influencing factors of resource support degree. Among the extracted fifth principal components, the loadings of the annual fiscal revenue and per capita GDP are relatively larger, so the fifth principal components are taken as the influencing factors of economic support degree. The linear combination equation of five principal components, namely the principal component score function, can be obtained by weighting the factor score coefficient. The results are as follows:

$$F1 = 0.930 * C_1 - 0.943 * C_2 - 0.225 * C_3 + \ldots + 0.098 * C_{33} - 0.864 * C_{34}$$

$$F2 = 0.294 * C_1 - 0.279 * C_2 + 0.312 * C_3 + \ldots + 0.065 * C_{33} - 0.331 * C_{34}$$

$$F3 = 0.035 * C_1 + 0.016 * C_2 + 0.443 * C_3 + \ldots + 0.952 * C_{33} - 0.071 * C_{34}$$

$$F4 = 0.215 * C_1 - 0.176 * C_2 + 0.362 * C_3 + \ldots + 0.270 * C_{33} - 0.100 * C_{34}$$

$$F5 = 0.042 * C_1 - 0.026 * C_2 - 0.725 * C_3 + \ldots - 0.082 * C_{33} + 0.358 * C_{34}$$

By taking the variance contribution rate of five principal component factors as the weight, the calculation model of principal component comprehensive score of tourism competitiveness of the Wanjiang City Belt is established. The results are as follows:

$$F = 0.46801 * F_1 + 0.23427 * F_2 + 0.10528 * F_3 + 0.09733 * F_4 + 0.09511 * F_5.$$

The comprehensive scores and rankings of tourism competitiveness of the Wanjiang City Belt are obtained by substituting the standardized data into the above calculation model, as demonstrated in Table 5.

5.3   Evaluation Results

When utilizing SPSS software to analyze and evaluate the tourism competitiveness of the Wanjiang City Belt, five principal component factors, i.e. five main indexes instead of 34

Table 4. Tourism Competitiveness Index Rotation Component Matrix and Component Score Coefficient Matrix.

Index	Index Rotation Component					Component Score Coefficient				
	1	2	3	4	5	1	2	3	4	5
C1	0.978	−0.157	−0.124	−0.016	−0.047	0.930	0.294	0.035	0.215	0.042
C2	−0.970	0.203	0.126	0.048	0.008	−0.943	−0.279	0.016	−0.176	−0.026
C3	0.044	0.898	−0.401	−0.065	0.166	−0.225	0.312	0.443	0.362	−0.725
C4	0.823	0.467	0.220	−0.150	0.185	0.442	0.854	0.125	0.178	−0.166
C5	0.725	0.587	0.072	−0.334	0.114	0.330	0.803	0.046	0.365	−0.333
C6	0.938	−0.303	−0.169	−0.008	0.004	0.975	0.178	−0.024	0.122	0.043
C7	0.829	0.273	−0.284	0.374	0.135	0.709	0.319	0.580	0.124	−0.209
C8	0.800	−0.009	−0.488	−0.331	0.110	0.806	0.166	−0.119	0.327	−0.450
C9	0.946	−0.196	−0.226	−0.114	−0.046	0.940	0.215	−0.051	0.256	−0.041
C10	0.972	−0.208	−0.107	−0.027	0.008	0.945	0.289	−0.004	0.149	0.038
C11	0.939	−0.143	−0.231	−0.048	0.207	0.939	0.281	0.022	0.056	−0.188
C12	0.969	−0.211	−0.123	−0.044	−0.004	0.946	0.277	−0.017	0.167	0.030
C13	0.799	−0.485	0.227	0.270	−0.057	0.839	0.187	0.040	−0.139	0.490
C14	−0.566	0.349	0.622	0.307	0.277	−0.758	0.307	0.243	−0.489	0.183
C15	0.753	−0.594	0.060	0.274	0.026	0.902	0.020	0.016	−0.204	0.379
C16	0.954	−0.263	−0.123	−0.066	−0.044	0.950	0.236	−0.061	0.183	0.066
C17	0.865	−0.468	0.039	0.175	0.012	0.940	0.146	0.006	−0.085	0.295
C18	0.615	−0.205	0.659	0.091	−0.370	0.401	0.485	−0.071	0.105	0.767
C19	0.271	0.778	0.563	0.002	−0.060	−0.265	0.886	0.291	0.223	0.098
C20	0.670	0.236	0.626	−0.321	−0.024	0.266	0.895	−0.215	0.158	0.240
C21	0.767	−0.602	0.035	0.208	−0.074	0.910	−0.002	−0.034	−0.097	0.401
C22	0.800	−0.041	0.568	−0.173	0.072	0.532	0.761	−0.198	−0.028	0.312
C23	0.777	0.249	0.129	−0.026	−0.562	0.469	0.460	0.168	0.659	0.326
C24	0.763	0.463	0.318	−0.300	0.112	0.348	0.899	−0.026	0.241	−0.113
C25	0.468	0.813	−0.223	−0.139	0.225	0.122	0.606	0.346	0.338	−0.620
C26	0.913	−0.259	0.048	0.311	−0.009	0.898	0.256	0.225	−0.028	0.277
C27	0.817	0.460	0.191	0.215	−0.195	0.445	0.667	0.452	0.360	0.155
C28	−0.631	−0.483	−0.220	−0.363	−0.434	−0.334	−0.723	−0.544	0.220	0.152
C29	0.897	0.154	0.199	0.224	0.287	0.683	0.652	0.305	−0.124	0.013
C30	−0.608	−0.663	0.169	0.125	0.383	−0.239	−0.482	−0.312	−0.765	0.170
C31	−0.166	0.650	−0.194	0.708	−0.103	−0.319	−0.016	0.936	0.117	−0.093
C32	−0.358	−0.716	0.303	0.170	0.488	−0.030	−0.294	−0.303	−0.873	0.241
C33	0.259	0.577	−0.303	0.691	−0.176	0.098	0.065	0.952	0.270	−0.082
C34	−0.906	−0.023	0.310	0.093	−0.272	−0.864	−0.331	−0.071	−0.100	0.358

Table 5. Comprehensive Scores and Rankings of Tourism Competitiveness Index of the Wanjiang City Belt.

City	Environmental support degree	Service support degree	performance development degree	Resource support degree	Economic support degree	Comprehensive score	Comprehensive ranking
Anqing	7.516968	12.98458	2.09116	5.469086	−2.72973	7.052753	1
Wuhu	8.722581	5.514581	0.90671	1.401512	5.418321	6.12136	2
Chizhou	7.152233	5.131844	7.164464	4.967506	−4.25441	5.382679	3
Ma'anshan	7.626532	−0.96834	−2.53851	−4.76941	3.269198	2.921913	4
Tongling	3.813589	−6.19975	−5.17293	−0.10868	0.42347	−0.18253	5

indexes, are selected for analysis. In Table 5, Anqing ranks first in comprehensive score with a score of 7.052753, and Tongling ranks bottom with a score of −0.18253. The comprehensive scores ranking from high to low are Anqing, Wuhu, Chizhou, Ma'anshan and Tongling. Through analyzing the five dimensions of the Wanjiang City Belt, it is found that Wuhu ranks first in environmental support degree with a score of 8.722581, and Tongling ranks last with a score of 3.813589. Moreover, Anqing ranks first in service support degree with a score of 12.98458, and Tongling ranks last with a score of −6.19975. Chizhou ranks first in performance development degree with a score of 7.164464, and Tongling ranks last with a score of −5.17293. Anqing ranks first in resource support degree with a score of 5.469086, and Ma'anshan ranks last with a score of −4.76941. Wuhu ranks first in economic support degree with a score of 5.418321, and Chizhou ranks last with a score of −4.25441.

6 Conclusions and Suggestions

In this paper, the tourism competitiveness evaluation system of the Wanjiang City Belt is constructed, and the SPSS factor analysis model is employed to comprehensively evaluate it. Thus, the scores of five principal component factors and comprehensive scores of the tourism competitiveness of the Wanjiang City Belt are obtained, indicating that the overall level of the tourism competitiveness of the Wanjiang City Belt is high. However, the scores vary significantly, with evident spatial heterogeneity. It is still necessary to adjust measures to local conditions, make joint efforts, establish the concept of the Yangtze River Economic Belt integration, collaboratively promote tourism competitiveness, and achieve the high-quality tourism development of the Wanjiang City Belt [1].

6.1 Develop Exquisite Tourist Routes Under Regional Linkage and the Concept of Integration

The five cities in the Wanjiang City Belt are geographically close and connected by mountains and rivers. The government should take the lead in coordinating the sustainable development and long-term interests of the tourism industry, strengthen inter-city exchanges and collaboration, give full play to the mutual stimulating role of the cities,

integrate into the construction of the Yangtze River Economic Belt, share resources in multiple directions, promote industrial clustering and openness to the outside world, and achieve win-win benefits.

Moreover, the local governments should strive to break down regional barriers affecting the overall development of regional tourism, integrate natural and cultural tourism resources along the Wanjiang River, expand tourism hinterland, and develop exquisite tourism routes along the Wanjiang City Belt.

In addition, they should establish the tourism integration information platform of the Wanjiang City Belt, take advantage of the spatial effect and neighborhood effect of the tourism industry, and jointly promote the tourism construction through the joint construction of scenic spots, the exchange of tourism talents, the sharing of tourism experience, and the cooperation of tourism enterprises in accordance with the principle of "complementary advantages, resource sharing, mutual benefit and coordinated development".

6.2 Achieve High-Quality Characteristic Development Through Quality Construction and Brand Awareness

The five cities shall fully exploit their advantages and characteristics, adhere to high standards, new ideas and precise positioning, and avoid the single, identical, stereotyped and low-level repeated development of scenic spots in the Wanjiang City Belt. They should attract tourists with sing unique cultural elements, and form the tourism clustering effect through "crossing a line with dots and making a plane with lines". While unleashing their advantages and characteristics, they will create a brand effect, build a multi-integrated tourist resort along the Wanjiang City Belt with intense riverside characteristics, and attract tourists with special tourism brands.

Meanwhile, they should improve the value chain of tourism industry in the Wanjiang City Belt, innovate the mode of "more time in scenic spots and less time on the road", and increase the investment in the infrastructure of "food, accommodation, transportation, shopping, and entertainment" to satisfy the needs of tourists at different levels. They should combine cultural heritage with tourism development, set up shopping stores with unique local characteristics, and enhance the value of shopping in the tourism industry.

6.3 Build an Intelligent Tourism Platform Under the Government Leadership and Marketing Thinking

The cities in the Wanjiang City Belt shall fully draw on the innovative experience of cities in the Yangtze River Delta in concepts, systems, services and management, play the role of government management in the macro-control of the tourism industry, boost investment in tourism, and consolidate the tourism infrastructure.

They should formulate a medium-term and long-term scientific and reasonable tourism sales promotion strategy, reinforce external publicity and promotion, and create an excellent tourism brand image. Meanwhile, they should perfect the construction of website groups such as the information network of the Bureau of Culture and Tourism, public service network and websites of scenic spots. They should promote tourism brands by using online media such as Weibo and WeChat, to enhance their tourism

popularity. Moreover, they can launch the tourist assistant apps in scenic spots, tourist hotels, tourist centers, transfer centers and other places. They can also equip AI devices for tourist interactive communication, practical experience, service terminals, etc., thus providing high-quality AI tourist services of "one-click online and one-stop offline".

Furthermore, they can establish an intelligent early warning application platform for real-time monitoring of tourist flow in scenic spots. Applying emerging technologies such as passenger flow positioning, trajectory analysis and passenger flow statistics can realize various functions, such as ticket booking. In the meantime, tourists can enjoy all-round services, such as tour guide through intelligent terminal. They should promote the application of AR, VR and other new technologies to construct three-dimensional virtual scenes, and use modern mobile interactive means to reproduce scenic spots, cultural and historical scenes vividly, thus realizing macro navigation and micro tour in combination with landscape introduction, cultural information, exhibits explanation and other contents. They should also make great efforts to improve the network information processing platform, such as automatic voice broadcast, comprehensive complaint handling, emergency rescue, security services, etc., and provide 24-h online manual services for passengers, especially real-time translation services for foreign tourists.

6.4 Build Talent Highland Through Talent Innovation and International Vision

Tourism competition is ultimately the competition of talent. Talents play the role of server and manager in the tourism industry, which is an indispensable key factor to enhance tourism competitiveness.

Government functional departments should strengthen the market demand research of tourism talents, issue policies and systems related to the introduction and cultivation of tourism talents, open channels to introduce talents, actively attract high-level elites in the tourism field and leading talents in tourism sales management, and take various measures to retain talents. Government, schools and enterprises should collaborate to jointly optimize the measures for tourism talents training, and increase the cultivation of technical and skilled tourism talents, such as tour guides, catering and translation.

Finally, they should reinforce the construction of tourism talent market, set up special construction funds, establish a talent pool for tourism professionals in the Wanjiang City Belt, jointly carry out pre-job training for those who are about to enter the tourism industry, and regularly enhance the professional knowledge and ability of on-the-job personnel, thus promoting tourism professionals' concept, technology, service methods and marketing methods to keep pace with the times and the progress of social development to satisfy the needs of different kinds of tourists.

References

1. Bing Hou, XiaoQian Zhou, XiaoXu Lu, Ran Tao, AiPing Zhang. The construction and empirical analysis on the evaluation system of urban cultural tourism competitiveness - Taking the urban agglomeration in the Yangtze River Delta region as an example. J. WORLD REGIONAL STUDIES. 23(06), 166–176.
2. Divisekera, S. (2003). A model of Demand for International Tourism. J. Annals of Tourism Research. 30(01), 31-49
3. HaiYan Zhou. (2007). A Study on the Evaluation of the Urban Tourism Competitiveness. J. Journal of Hubei University of Economics(Humanities and Social Sciences). 4(02), 55–57.
4. Lei Ding, XiaoGen Wu, Yi Wu, Jie Ding. (2006). A System of Evaluation Indicator for The Urban Tourism Competitiveness. J. ECONOMIC GEOGRAPHY. 26(03), 511-515.
5. Leiper, N. (1979). The framework of tourism: Towards a definition of Tourism, Tourist and the Tourist Industry. J. Annals of Tourism Research. 6(04), 390-470.
6. Lian Hu, ZiJie Liu, Ting Meng. (2020). Comprehensive Evaluation on Tourism Competitiveness of Provinces and Cities in the Yangtze River Economic Belt. J. JOURNAL OF CHENGDU UNIVERSITY OF THCHNOLOGY (Social Sciences). 28(05), 79–87.
7. PeiRan Chen, LuoCheng Zhang. (2017). Evaluation and strategy for urban tourism competitiveness of Guangdong Province. J. Journal of University of Chinese Academy of Sciences. 34(06), 701–711.
8. Pike, S. and Mason, R. (2011). Destination competitiveness through the lens of brand positioning: The case of Australia's Sunshine Coast .J. Current Issues in Tourism. 14 (02), 169-182.
9. ShiWei Hu. (2019). Tourism Competitiveness Evaluation Based on Analytic Hierarchy Process and SVR. J. Journal of Shenyang University (Natural Science).32(05), 404–409.
10. Shu Guo, Ning Cao. (2004). A Analysis of Urban Tourism Competition. J. COMMERCIAL RESEARCH. 47(09), 138-140.
11. WeiZhong Su, YingBao Yang, ChaoLin Gu. (2003). A Study on the Evaluation of Competitive Power of Urban Tourism .J. TOURISM TRIBUNE. 18(03), 39-42.
12. XiangXiang Shi. (2019). On Dynamic Evaluation of Urban Tourism Competitiveness in Central China. J. Journal of Southwest China Normal University (Natural Science Edition). 63(10), 40–48.
13. XianZhong Nie. (1998). Constructing Tourism Environment and Developing Metropolitan Tourism-case studies From Hong Kong and Shanghai. J. Urban Planning Forum. 42(02), 59-61.
14. XiaoLi Lin. (2014). System Dynamics Model Building and Empirical Research of City Tourism Competitiveness. D. Beijing: Beijing Jiaotong University.
15. XingXing Lu. (2020). Research on the Competitiveness of Tourism Industry Based on Diamond Model - A Case Study of Sanya City. J. Jiangsu Commercial Forum. 37(08), 59-62.
16. Yang Bai, XiaoXia Yang, Hao Fan. (2015). On Analysis of Tourism Resources Economic Conversion Rate and Inter-Provincial Variance in China. J. Journal of Southwest China Normal University (Natural Science Edition). 40(06), 85–90.
17. ZhengSheng Zhang, YongZhang Zhou. (2005). Demonstration Reseach on City Tourism Competition Power-A Case Study of Guandong Province. J. Resource Development & Market. 21(01), 13-16.
18. ZhiBo Chen, Hong Yin. (2019). Research on Urban Construction and Development in Shanxi Province Based on Spss Data Analysis. J. COMPUTER ENGINEERING & SOFTWARE. 40(03), 98-103.

19. ZongTai Wang. (2008). Perfecting the Evaluation System of Tourism Resource by Refreshing Ideas. J. RESEARCH ON DEVELOPMENT. 24(01), 121-124.
20. Ying Xiong, Qian Zhang, Kelun Hou, JianJun Yin, LiHua Huang. (2020). Tourism Competitiveness and Regional Tourism Cooperation around Dongting Lake from the Whole Domain Tourism. J. ECONOMIC GEOGRAPHY. 40(07), 211-219.