

Analysis on the Influencing Factors of the Competitiveness of China's Provincial Star Hotel Industry Based on Regression Analysis

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Abstract: This paper selects data in the 2017 China Tourism Statistics Yearbook about 31 provincial-level regions in mainland China, with cluster analysis used to analyze the differences in the competitiveness of the Star-rated Hotel Industry in China. The overall competitiveness difference is the largest in the east, second in the west, and smallest in the middle; the east is more competitive than the west, the south is more competitive than the north, the coastal provinces are more competitive than the inland provinces, and the economically developed provinces are more competitive than the underdeveloped provinces. This paper analyzes the factors affecting the competitiveness of provincial star-rated hotels. This paper proposes countermeasures such as accelerating regional economic development, increasing the proportion of the tertiary industry, increasing fixed asset investment in accommodation and catering, and expanding the degree of opening up at end.

Keywords: Star-rated Hotel Industry, Competitiveness, Difference, Influencing Factors

1. Introduction

Foreign research on hotel competitiveness focuses on influencing factors, and hotel cost is the decisive factor for hotel competitiveness [1], leadership style has an impact on hotel performance and competitiveness [2], and the tourism industry in tourist destinations directly affects the competitiveness of hotels [3]; the research methods include least squares method [4] and survival analysis technique method [5], and the research cases include the Dubrovnik area [6] and 90 cities in the United States [7]. The research content of domestic Star-rated Hotel Industry competitiveness involves the evaluation of hotel competitiveness [8] and concentration of hotel relative efficiency [9]. Research methods include principal component analysis method [10] and radar chart [11] etc.; research cases include Yiwu budget hotels [12] and the Pearl River Delta [13].

In summary, domestic and foreign research results have laid a solid foundation for this article and the future research on the competitiveness of Star-rated Hotel Industry. However, the use of quantitative analysis methods to deeply analyze the factors affecting competitiveness and propose specific countermeasures has not yet been involved.

2. Data Sources and Research Methods

This paper selects 10 indicators such as number of restaurants (houses), number of guest rooms (rooms), number of beds (pieces), number of employees at the end of the year (person), original price of fixed assets (ten thousand yuan), operating income (ten thousand yuan), business taxes and surcharges (ten thousand yuan), realized profit per capita (ten thousand yuan/person), total labor productivity (ten thousand yuan/person), and room occupancy rate (%). Based on the data in the 2017 "China Tourism Statistics" yearbook, using principal component analysis and inter-group link cluster analysis, using SPSS23.0 and ArcGIS 10.2 software, using China's provincial vector map as the base map data to make provincial stars. The level map of the difference in competitiveness of the first-class hotel industry (see Figure 1) shows five levels: strong competitiveness, strong competitiveness, general competitiveness, weak competitiveness, and weak competitiveness. The first-level star-rated hotel

industry is highly competitive, including Beijing, Shanghai and Guangdong; the second-level star-rated hotel industry is more competitive, including Zhejiang and Jiangsu; the third-level star hotel industry is generally competitive, including Shandong and Hunan, Fujian and Hainan; the fourth-level star-rated hotel industry is relatively weak; the fifth-level mid-star hotel industry is relatively weak, with only one province in Ningxia.

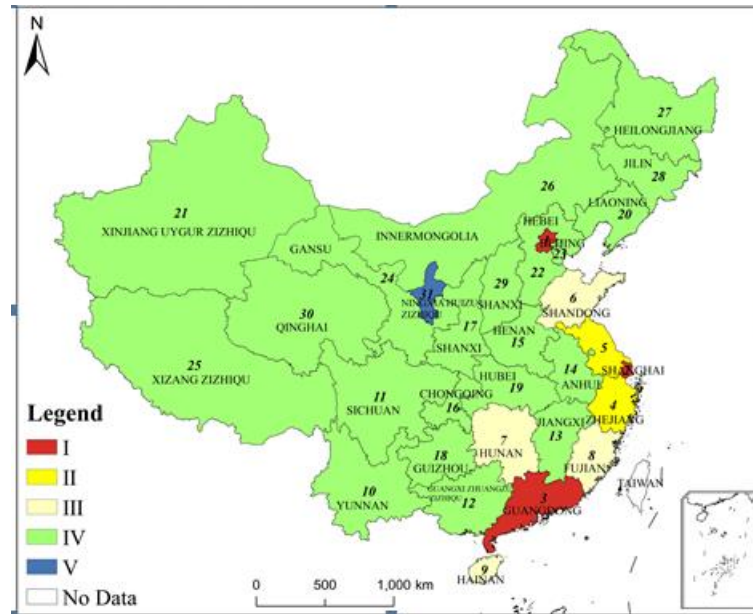


Figure 1: Competitive Grade Map of China's Provincial Star-rated Hotel Industry

3. Analysis of Influencing Factors of the Difference In Competitiveness of Star-rated Hotel Industry Among Provinces

This paper focuses on regional economic development level, service industry development level, tourism resource endowment, location and transportation, regional industrial policy and development environment, etc. to carry out correlation and regression analysis.

3.1 Economic Development Level

The level of provincial economic development is the most basic factor that determines the competitiveness of Star-rated Hotel Industry. Different provinces have different levels of economic development, leading to differences in investment in the hotel industry, which will directly affect the scale of development of the hotel industry in each province, leading to differences in the number of hotels, rooms, beds, and employees; At the same time, due to different levels of economic development, there will be differences in the level of people's consumption expenditures in hotels, which will seriously affect the investment in hotel industry operating costs in various provinces, and affect the original price and operating income of fixed assets in the hotel industry, business taxes and surcharges, etc. This leads to differences in the competitiveness of the provincial hotel industry. Based on calculations based on relevant analysis methods, this paper selects the provincial residents' disposable income to measure the level of economic development to study the impact on the competitiveness of the provincial Star-rated Hotel Industry.

3.2 Development Level of the Service Industry

Star-rated Hotel Industry is an important part of the service industry. The development level of the provincial service industry directly affects the competitiveness of the Star-rated Hotel Industry, and a higher level of service industry is an important guarantee for the construction and operation of star hotels. After calculating by related analysis methods, this paper selects the proportion of the tertiary

¹Source of the base map: Supervised by the Ministry of Natural Resources (Picture approval number: GS (2019)1825) Scale: 1:48 million.

industry to measure the development level of the service industry to measure the development level of the service industry, and to study the impact on the competitiveness of the provincial Star-rated Hotel Industry.

3.3 Tourism Resource Endowment

The endowment of tourism resources is an important factor that affects the competitiveness of the provincial Star-rated Hotel Industry. Due to the large differences in the endowment of tourism resources in China's provinces, a large number of rich and high-quality tourism resources are concentrated in the eastern coastal areas, the middle and lower reaches of the Yellow River, and the middle and lower reaches of the Yangtze River in the central provinces. These provinces give full play to regional cooperation, forming a high-density global tourism industry, attracting a large number of tourism consumers. As one of the important pillars of the tourism industry, the Star-rated Hotel Industry provides basic supply guarantee for tourism consumers and plays an important role in the six elements of the tourism industry, such as food, accommodation and entertainment. The provinces with the endowment of tourism resources have continuously increased the number of restaurants, fixed asset investment, operating income and business tax surcharges due to the increase in tourism consumers, which has led to the continuous expansion of the scale of the Star-rated Hotel Industry and the continuous improvement of the operating efficiency of the hotel industry. Calculated by related analysis methods, the number of 4A and 5A tourist attractions is selected to measure the endowment of tourism resources, and the impact on the competitiveness of the provincial Star-rated Hotel Industry is studied.

3.4 Location

Location is one of the basic factors that affect the competitiveness of the provincial Star-rated Hotel Industry. The superior location will attract a large number of tourists and increase the accessibility of tourists. At this stage, the provinces (municipalities directly under the central government) with better geographical conditions include Beijing, Shanghai, Guangdong, Jiangsu, and Zhejiang, followed by Fujian, Tianjin, Shandong, and Hebei. The location conditions are relatively poor in the coastal provinces, Hainan, Liaoning and Guangxi, but still better than the inland provinces. The location conditions of the southwest and northwest provinces are generally poor. From the results of cluster analysis, it can be seen that the competitiveness of Star-rated Hotel Industry is generally consistent with the location conditions. Calculated by related analysis methods, the tourism market share is selected to measure the location, and the impact on the competitiveness of the provincial Star-rated Hotel Industry is studied.

3.5 Transportation

Transportation is one of the basic factors that affect the competitiveness of the provincial Star-rated Hotel Industry. Developed tourism transportation can improve unfavorable location conditions to a certain extent, enhance the accessibility of tourist attractions and scenic spots, and will continue to increase the tourist source market, and provide sufficient source protection for Star-rated Hotel Industry. Calculated by relevant analysis methods, the number of public transportation vehicles and total passenger transport per 10,000 people in the province is selected to measure the provincial traffic, and the impact on the competitiveness of the provincial Star-rated Hotel Industry is studied because they respectively reflect the development of local public transportation and the total amount of passenger transport carried by transportation vehicles.

3.6 Industrial Policy and Development Environment

Government policies and development environment related to the hotel industry are one of the important factors that affect the competitiveness of the provincial Star-rated Hotel Industry. Regarding industrial policy, calculated by relevant analysis methods, selected fixed asset investment of accommodation and catering to study the impact on the competitiveness of the provincial Star-rated Hotel Industry; Regarding the development environment, it is measured from two aspects: the level of tourism education and the degree of opening to the outside world. Calculated by related analysis methods, this paper selects the number of provincial tourism colleges, the number of students in tourism colleges and the total amount of goods import and export to study the impact on the competitiveness of the provincial Star-rated Hotel Industry.

This article uses SPSS software to analyze the residents' disposable income, the proportion of tertiary industry, the total number of 4A and 5A scenic spots, the tourism market share, and the number of public transport vehicles per 10,000 people in the 2017 "China Statistical Yearbook" and "China Tourism Statistical Yearbook" Pearson correlation analysis of total passenger transport volume, fixed asset investment in accommodation and catering, the number of tourism schools, the number of students in tourism schools, and the total amount of imports and exports of goods. The conclusion shows: the income allocated to the disposable income of residents (0.807***), the proportion of the tertiary industry (0.610***), the total import and export of goods (0.782***) and the number of public transport vehicles per 10,000 people (0.627* **) have strong correlation; the number of students in tourism colleges (0.498**) is moderately correlated; 4A, 5A scenic spots (0.383*), tourism share (0.370*), total passenger traffic (0.434*) and the number of tourism colleges (0.410*) are weakly correlated; and fixed asset investment (0.288) for accommodation and catering is irrelevant.

In order to further explore the relationship between the competitiveness of star-rated hotels and the indicators of various influencing factors, this paper normalizes and unifies the dimensions of the above-mentioned indicators, and this paper uses them as independent variables. The causal relationship between influencing factors and the competitiveness of Star-rated Hotel Industry, and the degree of influencing contribution is measured. After the model is automatically identified, the final disposable income of residents, the proportion of the tertiary industry, the fixed asset investment of accommodation and catering, and the total amount of imports and exports of goods are included in the model. See Table 1 for details. It can be seen from Table 1 that these four indicators can explain the 86.4% changes in the competitiveness of Star-rated Hotel Industry and have a significant positive causal relationship to competitiveness. Among them, the residents' disposable income has the greatest positive impact, and the rest are the fixed asset investment of accommodation and catering, the total import and export of goods and the proportion of the tertiary industry.

Table 1: Regression analysis results (n=31)

	Non-standardized coefficients		Standardized coefficients	t	p	VIF	R ²	Adjusted R ²	F
	B	Standard error	Beta						
Constant	-1.194	0.158	-	-7.564	0.000**	-			
Total import and export of goods	1.005	0.422	0.257	2.384	0.025*	2.230			
The proportion of tertiary industry	0.993	0.479	0.254	2.075	0.048*	2.868			
Fixed asset investment in accommodation and catering	1.047	0.272	0.357	3.853	0.001**	1.643	0.864	0.843	F=41.312 p≤0.001
Resident disposable income	1.739	0.461	0.501	3.775	0.001**	3.375			

Dependent variable: competitiveness

Note: * and ** refer to p<0.05 and p<0.01.

4. Conclusion

This paper uses theories of regional competitiveness and industrial competitiveness in regional economics and industrial economics. In addition, this paper uses principal component analysis method and cluster analysis method to empirically analyze the big difference in the competitiveness of my country's provincial star-rated hotel industry and the overall distribution characteristics of the East is strong and the West is weak. The competitiveness of the Star-rated Hotel Industry in the provinces is quite different. The east is stronger than the west, the south is stronger than the north, the coastal provinces are stronger than the inland provinces, and the economically developed provinces are stronger than the underdeveloped provinces. In addition, this article uses correlation and regression analysis to analyze the influencing factors of Star-rated Hotel Industry's competitiveness. The results show that the provincial Star-rated Hotel Industry competitiveness difference is related to its economic development level, service industry level, transportation, degree of opening to the outside world, and

tourism education, and is related to national disposable income, the proportion of tertiary industry, fixed asset investment in accommodation and catering, and the total amount of imports and exports of goods has a significant positive impact. Therefore, we should speed up the development of the provincial regional economy, increase the proportion of the tertiary industry, increase investment in fixed assets for accommodation and catering, and expand the degree of opening up to the outside world to narrow the competitiveness of the provincial Star-rated Hotel Industry. The strategic focus of the eastern region should be the adjustment and upgrading of the hotel industry structure, the improvement of the service efficiency of employees, the improvement of management level, and the development of the international market. The central and western regions need to rely on abundant tourism resources to continuously innovate and develop characteristic tourism products. In addition, it is necessary to strengthen the construction of infrastructure, especially pay attention to the convenience of transportation, attract more tourist consumers, so as to ensure that the source of star-rated hotels is sufficient and realize the continuous expansion of the scale of the industry; at the same time, the government should adopt a policy of actively encouraging the development of tourism and hotel industries; provide a good environment for the development of human resources to ensure the improvement of industry operating efficiency.

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