



Research on Economic Connection Degree and Development Path of Sports Tourism Demonstration Area in Hainan Province

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Abstract

It is an important subject of tourism economic development. By collecting and arranging the total number of tourist receptions and total tourism revenue of 18 counties and cities in Hainan Province in 2016 and 2020, the degree of tourism economic connection was measured based on the modified gravity model, and the visual analysis was carried out through ArcGIS to explore the sports tourism demonstration area in Hainan Province. The results show that: from a static point of view, the northern comprehensive sports tourism area, the southern tropical coastal leisure resort sports tourism area and the eastern exhibition health sports tourism area are relatively closely linked, the western mountain and sea leisure sports tourism area, as well as the central tropical rainforest and national characteristic sports tourism area have loose economic ties. According to the development characteristics of five sports tourism areas, this paper puts forward specific development paths.

Keywords: *Hainan Province, Sports tourism demonstration area, Modified gravity model, Tourism economic connection*

1. INTRODUCTION

The overall plan for the construction of Hainan free trade port issued by the State Council in 2020 guides the economic and social transformation and construction of Hainan Province. The development of Hainan Province has risen to a higher level and received extensive attention from the society. As one of the main pillar industries in Hainan Province, tourism has played a vital role in the development of the whole society. The development plan of Hainan national sports tourism demonstration area (2020-2025) highlights the important position of sports tourism in the composition of tourism in Hainan Province.

Regional economic connection originates from scholars' research on the unbalanced development and mutual relationship of regional economic units in order to meet the needs of regional social and economic development. It is manifested in the interaction and relationship between regional economic entities, which is a necessary condition for modern regional economic development [2]. Tourism economic research started early and achieved fruitful results, forming a complete

research system, mainly focusing on the development mode and correlation degree between cities through the analysis of tourism economic connection [5]; In recent years, the research on tourism economic ties between cities has become a hot issue in the academic circle. Most of the studies on tourism economic linkages in China focus on economically developed urban agglomerations such as the Yangtze River Delta, Beijing Tianjin Hebei region, and cities along the Belt and Road. For example, Cao et.al study the strength of urban tourism economic linkages in the perspective of inter city traffic accessibility in the Yangtze River Delta Based on the economic connectivity model [1]; Yang made an in-depth study on the tourism economic connection degree of various regions in Beijing, Tianjin and Hebei [4]; Zou studied the spatial structure and cooperation pattern of tourism cooperation among major node cities in China along the Belt and Road [6]; To sum up, in the current academic research on tourism economic linkage, there are few relevant studies on the economic linkage between regions in Hainan Province.

The development momentum of Hainan Province has improved in recent years, and sports tourism has made a

great contribution to the tourism economy of Hainan Province. Although some policies and plans have been issued to clarify the division of its development space dimensions, the exploration of regional tourism economic linkages is relatively lacking in the academic field. This paper use the modified gravity model to calculate the tourism economic connection degree of 18 counties and cities in Hainan Province, carry out visual processing and analysis through ArcGIS, take the differentiated development scope of five areas in the construction of sports tourism demonstration area as an example, explore the trend of Hainan tourism economy and put forward the corresponding development strategies, so as to provide reference and reference for the development of sports tourism in Hainan Province.

2. DATA SOURCES AND RESEARCH METHODS

2.1. Scope of the Study

The scope of this study includes five plates of Hainan Province: comprehensive sports tourism area in the north (includes Haikou, Chengmai and Wenchang), tropical coastal leisure and vacation sports tourism area in the south (includes Sanya, Ledong Li Autonomous County, Lingshui Li Autonomous County and Baoting Li and Miao Autonomous County), exhibition and health sports tourism area in the East (includes Qionghai and Wanning), mountain and Sea Leisure Sports tourism area in the West (includes Danzhou, Dongfang, Lingao and Changjiang Li Autonomous County) and sports tourism area with national characteristics in the central tropical rainforest (includes Wuzhishan, Ding'an County, Tunchang County, Qiongzong Li and Miao Autonomous County, and Baisha Li Autonomous County).

2.2. Data Sources

This paper selects 18 prefecture-level counties and cities in Hainan Province as the research object, takes the sports tourism demonstration area in the development plan of Hainan national sports tourism demonstration area (2020-2025) as the main regional division basis, and mainly collects the total number of tourists is the sum of inbound tourists and domestic tourists, and the total tourism income includes inbound tourism income and domestic tourism income in 2016 and 2020. The data on the total number of tourists and total income come from the official website of the county and municipal governments at the prefecture-level, the statistical bulletin of national economic and social development and the statistical yearbook issued by the Bureau of statistics.

The administrative division data of Hainan Province is obtained from the geographic situation monitoring cloud platform; The statistics of the shortest distance between the two cities are obtained through ArcGIS XY

coordinate acquisition, XY line transformation and projection transformation.

2.3. Research Methods

Tourism economic connection degree is an index that reflects the strength of tourism material flow, capital flow, information flow and personnel flow among economic units in the region. It can objectively reflect the intensity and interaction of tourism exchanges among economic units. At the same time, it can also reflect the radiation capacity of tourism economic centers in the region and the acceptance of tourism centers in surrounding areas [6].

The revised gravity model is generally used to measure the tourism economic connection degree between cities. The model believes that the tourism economic connection degree is positively correlated with the product of the total tourism income and the total number of urban tourists between the two regions, and negatively correlated with the shortest traffic distance between the two regions. The specific calculation formula is as follows [3]:

$$R_{ij} = \frac{\sqrt{P_i G_i} \times \sqrt{P_j G_j}}{D_{ij}} \quad (1)$$

Among them, R_{ij} represents the tourism economic connection degree between cities i and j , P_i and P_j represent the total number of tourists received by cities i and j (unit: 10000), G_i and G_j represent the total tourism revenue of cities i and j (unit: 100 million yuan), and D_{ij} represents the shortest traffic distance between cities i and j (unit: km). Due to the visual analysis using ArcGIS, the straight-line distance between the two regions needs to be selected, Therefore, the government distance between the two administrative sections is taken as the shortest traffic distance in the formula.

3. RESULT ANALYSIS

In order to visualize the value of tourism economic connection degree between counties and cities, connect the calculated tourism economic connection degree between counties and cities at the prefecture-level with the existing county and city data in ArcGIS, change the hierarchical quantity symbol in its attribute, set the interval size interval and the thickness and color of the visual line. The thicker the line, the darker the color, the stronger the tourism economic connection degree between cities.

3.1. Analysis of Overall Tourism Economic Connection Degree

Through data collection, calculation and visual analysis, the visual analysis chart of tourism economic connection degree of 18 counties and cities in Hainan province in 2016 and 2020 is finally obtained.

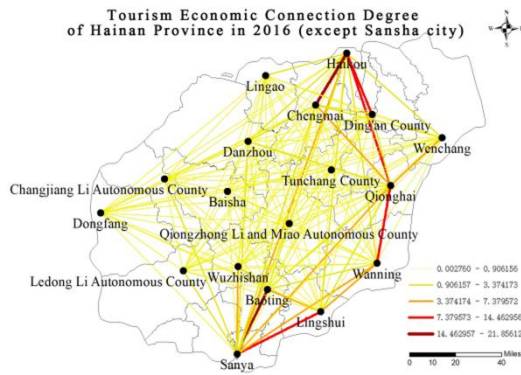


Figure 1 Tourism economic linkage of 18 counties and cities in Hainan Province in 2016

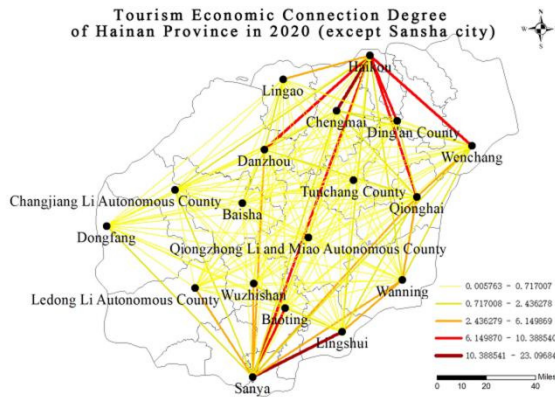


Figure 2 Tourism economic linkage of 18 counties and cities in Hainan Province in 2020

Through overall analysis, with the proposal of the concept of Hainan free trade port construction in 2018, the overall trend of tourism economic ties in 18 counties and cities of Hainan is better. The number of dark lines representing economic ties in the figure has increased, indicating that the degree of tourism economic ties has gradually increased. Although there have been fluctuations in some areas due to the impact of the epidemic, the overall situation has not changed greatly.

It can be seen from the figure that the overall characteristics of regional economic connectivity in 2016 and 2020 are as follows: ① Significant dual core drive. Sanya and Haikou prefecture level cities have a large number of dark and thick lines with other counties and cities, and the regional economic connection is significant, forming a dual drive with Sanya and Haikou as the core. ② The relative economic connection intensity has been significantly improved. The number of dark and thick lines of tourism economic connection degree in Hainan Province in 2020 is significantly higher than that in 2016, indicating that the overall situation has improved compared with 2016, and the economic connection degree is on the rise, especially the two economic centers of Sanya and Haikou, which have significantly strengthened the economic connection degree with other counties and cities.

3.2. Analysis of Tourism Economic C-connection Degree of "Five Areas"

3.2.1. Northern Comprehensive Sports Tourism Area

The biggest difference between the 2020 data of the northern comprehensive sports tourism area and the 2016 data is that the tourism economic connection between Haikou and Wenchang has been significant-

ly strengthened. The development characteristics are summarized as follows: ① Haikou has a strong driving effect. The tourism economic connection between Haikou and other counties and cities is strong, and it has increased significantly from 2016 to 2020. ② Regional linkage is relatively strong, and economic development is gradually balanced. The tourism economic connection between prefecture level counties and cities in the northern comprehensive tourism area has been strengthened and presented a balanced state.

3.2.2. Southern Tropical Coastal Leisure Resort Sports Tourism Area

The biggest difference between the 2020 data of the southern tropical coastal leisure resort sports tourism area and the 2016 data is that the connection between Sanya and other counties and cities is further strengthened. The development characteristics are summarized as follows: ① Sanya's core drive is significant. As a well-known international tourism city and seaside resort, Sanya has a weak seasonality and can attract a large number of passengers all year round, thus contributing to the tourism economy of the whole Hainan Province. ② Ledong Li Autonomous County continues to lag behind in tourism economic connection. Compared with other counties and cities, Ledong Li Autonomous County has a long traffic distance and relatively weak tourism economic development, resulting in a low degree of tourism economic connection with other counties and cities.

3.2.3. Eastern Exhibition Health Sports Tourism Area

The biggest difference between the 2020 data and 2016 data of the eastern Convention and Exhibition health sports tourism area is that the value of economic connection decreases but the relative value level increases. The summary of its development characteristics is as follows: ① The driving force of Wanning and Qionghai is strong and complementary. Due to its close geographical location, maintaining the core advantages of convention and exhibition for a long time, the tourism economy is closely linked, driving each other and promoting development. ② The heat of development gradually subsides. The tourism economic connection

between the two regions has decreased, and the social influence has gradually weakened, resulting in the gradual loss of new vitality of tourism interaction between the two cities.

3.2.4. Western Mountain and Sea Leisure Sports Tourism Area

The biggest difference between the 2020 data of western mountainous and maritime leisure sports tourism area and the 2016 data is that the overall connection degree is enhanced, and the economic connection degree and level between Danzhou and Lingao County are significantly enhanced. The summary of its development characteristics is as follows: ① The connection degree of overall regional development is weak. The resources lack distinctive characteristics and influential social activities, so the driving link is weak. ② Gradually pick up and the trend is good. It is speculated that with the normalization of the epidemic and the gradual recovery of tourism in the next few years, the tourism economic connection degree of the central region will be significantly improved.

3.2.5. Central Tropical Rainforest and National Characteristic Sports Tourism Area

The biggest difference between the 2020 data of the central tropical rainforest and the sports tourism area with national characteristics and the 2016 data is that the overall connection degree is enhanced. The development characteristics are summarized as follows: ① The connection degree of overall regional development is weak. Due to the relatively single characteristics of tourism resources in the west, the tourism economic development of the whole western region is relatively backward, and the driving links between regions are also very weak. ② Qiongzong and Wuzhishan have the potential to drive development. These two regions have the potential to become the core support to drive the development of central China.

4. SUGGESTIONS ON THE DEVELOPMENT PATH OF "FIVE AREAS" IN HAINAN SPORTS TOURISM DEMONSTRATION AREA

4.1. Northern Comprehensive Sports Tourism Area: Core Driven and Featured

Giving full play to the leading role of Haikou in the economic and social levels for the other two counties and cities. Strengthen the publicity and promotion of Wenchang and highlight its tourism core characteristics and highlights. Fully excavating the bright spots of Wenchang, developing and planning sports tourism projects and improving the level of tourism economy will play a good role in promoting the overall regional

economic development.

4.2. Southern Tropical Coastal Leisure Resort Sports Tourism area: Core Radiation and Directional Development

Give full play to Sanya's tourism economic advantages and drive the development of surrounding autonomous counties. The surrounding counties and cities refer to the development model of Sanya to improve the overall level of tourism and promote the overall level of tourism economy. Give full play to the construction advantages of Hainan free trade port, build the southern region into an internationally renowned sports tourism area, and focus on tapping its leisure tourism potential, carry out large-scale activities such as health care conferences to enhance international influence.

4.3. Eastern Exhibition Health Sports Tourism Area: Relying on Its Advantages, Linkage and Income Generation

Maintain the advantages of the exhibition and expand the new model of "quiet" health and leisure. With harmony, sharing and inclusiveness as the core concept, we can carry out vacation tourism such as health preservation, leisure and entertainment, chess games and other quiet sports tourism projects, highlighting the differences between Wanning and Qionghai, creating a new model of health and leisure focusing on "quiet" tourism. Integrated development of the Wanning and Qionghai to achieve linkage income generation.

4.4. Western Mountain and Sea Leisure Sports Tourism Area: Capital Investment, Event Ignition

Create characteristic events and stimulate tourism development. As the core area of mountain tourism resources, the key to distinguishing the differentiated development of the other four districts lies in the creation of buying points. Dongfang has paragliding and low altitude skydiving, while other counties and cities have obvious advantages in mountain tourism natural resources. The scenic spots of different counties and cities are connected in series through tourism routes, so as to achieve the aggregation effect of sports tourism and drive the development of the whole western region.

4.5. Central Tropical Rainforest and National Characteristic Sports Tourism Area: New Positioning with the Help of Hot Spots

Develop ethnic sports tourism with differentiated positioning and prominent characteristics. We should rely on the tropical rainforest resources such as Wuzhishan and the traditional sports characteristic resources of Li

and Miao to develop characteristic national sports tourism routes. The central region has rich tropical rainforest resources. The sports tourism products that can be developed include canyon rafting, rainforest rock climbing, jungle adventure, tropical ecological hiking education, jungle river tracing, etc. it is very suitable for developing Rainforest Adventure Sports Tourism Projects loved by young people at present.

5.CONCLUSIONS

To sum up, with the social progress and economic development, the tourism economic linkage of Hainan Province in 2020 has been improved compared with that in 2016, and the tourism economic linkage of various parts of Hainan sports tourism demonstration zone has also been strengthened. According to the economic development characteristics and resource characteristics of different sports tourism areas, this paper puts forward suggestions for future development, which will contribute to the construction and development of differentiation of sports tourism in Hainan Province in the future.

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