

Research on the Influence of the Construction of Xiongan New Area Based on GIS Technology on Beijing-Tianjin-Hebei Tourism Cooperation

Hui Zhang^{1, a, *}, Juan Wang^{2, b, *}

¹ School of Economics and Management, Beijing Jiaotong University, Beijing 100000, China

² School of Economics and Management, Beijing Jiaotong University, Beijing 100000, China

^a zhangh@bjtu.edu.cn; ^b 17120723@bjtu.edu.cn

Keywords: Beijing-Tianjin-Hebei tourism; construction of Xiongan New Area; GIS spatial analysis; impact mechanism

Abstract: This paper analyzes the main impact of the construction of Xiongan New Area on the tourism development of Beijing-Tianjin-Hebei region through GIS spatial analysis. The results show that the popular tourist attractions in Beijing, Tianjin and Hebei are scattered and blocky, and the concentration of scenic spots in Hebei is behind that of Beijing and Tianjin. The accessibility analysis results show that the Beijing-Tianjin-Hebei tourism belt-shaped regional tourism cooperation is concentrated in the south of Beijing, Tianjin and Hebei. The construction of Xiongan New Area will promote the tourism cooperation in the northwest of Beijing, Tianjin and Hebei through the market mechanism and government regulation mechanism, and ease the Beijing-Tianjin-Hebei tourism. mitigate the degree of imbalance between the North and the South.

1. Introduction

Among the three major urban agglomerations in China, Beijing-Tianjin-Hebei's tourism cooperation and linkage benefits have been widely concerned by the tourism industry, academic circles and the community. The development of the Beijing-Tianjin-Hebei tourism circle relies on Beijing- a mega-city. However, Beijing-Tianjin-Hebei's tourism cooperation and linkage benefits lag far behind the tourism development of the two major urban agglomerations of the Yangtze River Delta Urban Agglomerations and the Pearl River Delta.

2. Literature Review

In 1988, Li Dengke pointed out that horizontal linkage is the best way for Beijing-Tianjin-Hebei to carry out multi-level tourism [1]. From 2004 to 2008, scholars have studied from the perspective of tourism development, integration and cooperation mode of Beijing-Tianjin-Hebei, and provided many valuable opinions for the initial development of Beijing-Tianjin-Hebei tourism cooperation [2-5]. Since 2009, the competition and cooperation of tourism in the Beijing-Tianjin-Hebei region and the division of labor, cooperation and coordinated development of tourism-related industries have begun to receive attention. It has been clearly recognized that the regional development is unbalanced during the development of tourism in Beijing, Tianjin and Hebei, and the layout of the tourism industry is unreasonable. Beijing radiation belts are far less effective than Shanghai and Guangdong [6-8]. After 2014, some scholars compared the development model and development path of the Yangtze River Delta Urban Agglomerations and the Pearl River Delta and overseas urban agglomerations, and provided reasonable answers and related suggestions for the development of related issues in the coordinated development of Beijing-Tianjin-Hebei tourism [9]; Some scholars have used GIS to carry out a series of in-depth studies on the traffic problems and spatial structure of the Beijing-Tianjin-Hebei tourism circle. [10]; Some scholars have also recognized the rationality of the layout of the tourism industry in the Beijing-Tianjin-Hebei tourism development system. and proposed The necessity of developing Hebei leisure and sports tourism industry [11].

In recent years, the research on Beijing-Tianjin-Hebei tourism cooperation and linkage benefits has been based on the overall situation, mainly focusing on the qualitative analysis of the Beijing-Tianjin-Hebei tourism integration and the coordinated development of Beijing-Tianjin-Hebei, as well as the tourism industry. Most of the researches on physics are used to explain the phenomena around the economic perspective. Most of the research from the perspective of geography is in the analysis of tourism spatial structure and traffic factors. The research on the impact of Xiongan New Area on Beijing-Tianjin-Hebei tourism cooperation is relatively blank. Combined with previous research, this paper mainly takes the spatial structure and the dynamic mechanism of the impact of Xiongan New Area on Beijing-Tianjin-Hebei tourism as an entry point, and studies the related influence of the construction of Xiongan New Area on the Hebei Province in the Beijing-Tianjin-Hebei tourism cooperation, and The chain reaction generated by the Beijing-Tianjin-Hebei tourism cooperation.

3. Data sources and research methods

3.1 Results of nuclear density analysis

As shown in Figure 1, it can be seen from the distribution map of the popular scenic spots and traffic in Beijing-Tianjin-Hebei, the distribution of popular tourist attractions in Beijing-Tianjin-Hebei is mainly along the Beijing-Tianjin-Hebei railway, It is in line with the trend of the Beijing-Tianjin-Hebei transportation network, which is also in line with our general perception of the relationship between tourism and transportation networks. As shown in picture 2. According to the exponential analysis in the legend, the larger the index, the stronger the concentration. The most concentrated area of the scenic spot is the area centered on the intersection of the central and southern parts of Beijing, northwestern Tianjin and the northern boundary of Langfang. The tourism gathering center centered on this also radiates some scenic spots in Chengde City and Baoding City. Thanks to the opportunity of the Beijing and Zhangjiakou to host the Winter Olympics, a new tourist cluster centered on Zhangjiakou is taking shape. However, from Figure 2, we can clearly see that the integration of tourism in Beijing, Tianjin and Hebei has not yet taken shape, and the tourist attractions in Hebei Province have not formed a good development with Beijing and Tianjin. What is more regrettable is that the types of advantageous tourist attractions in Hebei can not only complement the tourism resources of Beijing, but can substitute each other.

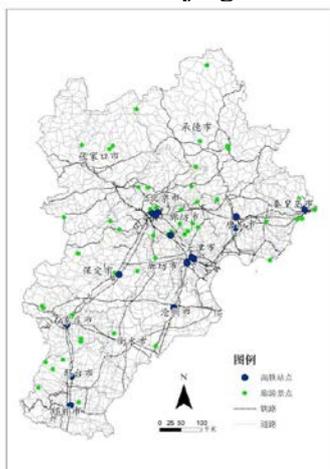


Fig.1. Beijing-Tianjin-Hebei scenic spots and traffic map

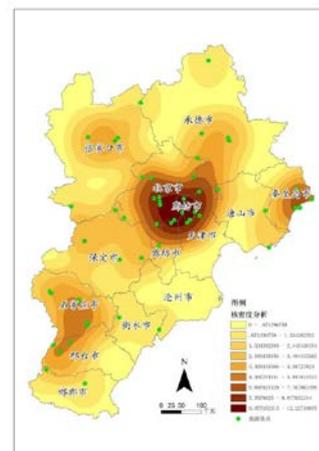


Fig.2. Nuclear density analysis of Beijing-Tianjin-Hebei scenic spot

3.2 Analysis of accessibility of scenic spots

The location access distance cost is divided into two levels of 50km and 100km, and the reachability coverage centered on each of the popular attractions of Beijing, Tianjin and Hebei is analyzed. It can be seen from Fig. 3 that on the basis of the point-like discrete distribution, four

block-shaped tourist belts with the core of Langfang North, Zhangjiakou, Qinhuangdao and Shijiazhuang can be formed. In the process of developing the local surrounding tourism market, we can strengthen the regional tourism cooperation of these four major sections, and gather the surrounding advantageous tourism resources to form a characteristic and systematic combination of tourism products. Combined with the time-accessibility time cost analysis of the scenic spot in Figure 4, the time cost of tourism in the Beijing-Tianjin-Hebei region is relatively low, and there is a large overlap in the coverage of one hour, covering about two-thirds of the total area of the Beijing-Tianjin-Hebei region. To achieve a planar area connection. The realization of Beijing-Tianjin-Hebei tourism integration is very likely, but the attraction of Hebei tourism products and the development of internal passenger sources in Hebei Province are the main problems.

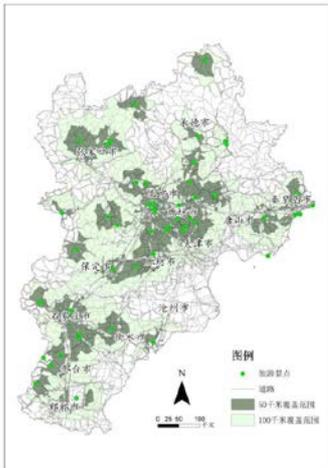


Fig.3. Attractions reachability distance cost

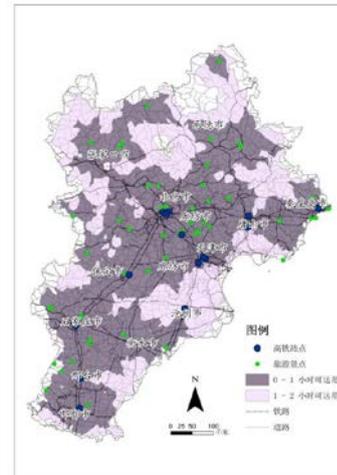


Fig. 4. Attractions access time cost

3.3 Analysis of accessibility of high-speed rail stations

As shown in Figure 5. In the 2017 high-speed rail distribution network, it can be clearly seen that the high-speed rail network in the southern part of Beijing-Tianjin-Hebei is developing better. The number of scenic spots within 50km of the reach of high-speed railway stations in Hebei is less than one-fifth of the popular tourist attractions in Hebei. while the number of scenic spots covered within 50km of the Beijing-Tianjin high-speed railway station accounts for about half of the popular tourist attractions in the Beijing-Tianjin region. In addition, the 50km reachable area of the high-speed railway stations in Beijing, Tianjin and Langfang overlaps in a large area, forming a continuous strip-shaped tourist passage. This is also an important reason why the linkage effect between Tianjin and Beijing is much higher than the linkage effect between Beijing and Hebei. After the announcement of the construction of Xiongan New Area in 2017, the construction plan for the high-speed railway of Xiongan New Area will be launched, and the coverage of the accessibility of the high-speed railway station will be further expanded, which will help to form a new tourism cooperation zone.

In the high-speed time cost accessibility analysis in Figure 6, we can more clearly see the strip connection of the Beijing-Tianjin-Hebei tourism cooperation. The focus of tourism cooperation between Hebei and Beijing-Tianjin-Hebei is mainly in the southeastern part of Hebei. It is a difficult point and key point to be considered that how to lay out the high-speed railway transportation network in northern Hebei, and the development of tourism in northern Hebei in the next study.

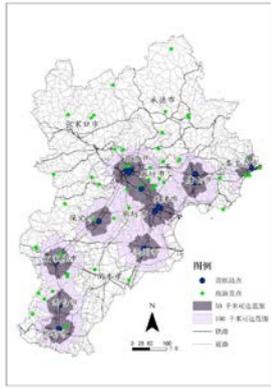


Fig.5. High-speed rail station distance cost accessibility

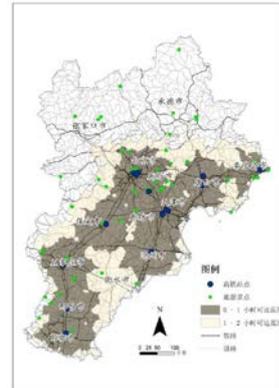


Fig. 6. Time-cost accessibility of the high-speed rail station

4. The dynamic mechanism of the impact of Xiongan New Area on Beijing-Tianjin-Hebei tourism

4.1 Government regulation and control

First, the flow of corporate and university resources from Beijing to Xiong'an means the flow of human resources, which means that the source market is from Beijing to Xiong'an. Secondly, to become the “anti-magnetic center” of the two metropolises of Beijing and Tianjin, the public service and infrastructure of Xiongan New Area will surpass the existing level of Beijing and Tianjin, further enhance the service quality of Hebei tourism and improve the tourist experience. In addition, Beijing's non-capital function is not only located in Xiongan New Area, but in the whole area of Beijing and Beijing-Tianjin-Hebei region. Xiongan New Area is the main bearing place, and shares responsibility for non-capital functions and coordination with other regions. The closeness and integration of transportation make the exchange of tourists in the tourism market more likely than in the past. The influence of Xiongan New Area in the early period was mainly due to government power. The government's macro-control has laid the foundation for the urban development of Xiong'an New District from various aspects such as policies and regulations, standard setting and public project construction funds. Taking Xiong'an as a force point and a balance point to shake the tourism linkage of the entire region of Beijing-Tianjin-Hebei.

4.2 Market mechanism

The supply and demand mechanism of the market is the main body of the market mechanism, and it is the reflection and performance of the relationship between producers and consumers. The construction of Xiongan New Area is about to change the supply and demand relationship of the Beijing-Tianjin-Hebei tourism market. After 2017, from the perspective of demand, the income level and consumption structure of Beijing's population and the strong demand for short-term leisure and holiday all mean that they are the main consumer groups of Beijing-Tianjin-Hebei tourism. Part of the population of Beijing has been dispersed to other urban areas in Xiong'an and Beijing-Tianjin-Hebei with the disintegration of non-capital functions. This means that the tourist market has shifted, and the tourism demand in Hebei, Tianjin and Xiongan New Area will be greatly improved. From the perspective of supply, the tourism resources of Hebei Province are widely distributed and diverse, at this time, the substitutability of Hebei and Beijing scenic spots will no longer be the disadvantage of Hebei tourism development. The planning and construction of Xiongan New Area will also improve the standards of public services and infrastructure in Hebei Province, and provide tourists with higher quality of tourism services. Therefore, under the influence of many factors, the supply capacity and supply level of Hebei tourism will be compared with Beijing and Tianjin. The tourism needs of the city are further matched.

5. Conclusion

The main conclusions and recommendations of this paper are as follows: The distribution of popular tourist attractions in the Beijing-Tianjin-Hebei region is roughly consistent with the trend of the Beijing-Tianjin-Hebei transportation network. The tourist attractions in Hebei Province are scattered. Under the construction opportunities of Xiong'an New District, Hebei's construction of scenic spots should avoid conflicts with the existing types of scenic spots in Beijing, focusing on the development of leisure cultural tourism. The accessibility analysis of the Beijing-Tianjin-Hebei scenic spot shows that Hebei's tourism product development and Hebei's development of Beijing-Tianjin-Hebei tourist sources are insufficient. In the process of developing tourism products and tourist routes, the cooperation in the urban area can be strengthened, and the characteristic tourist routes connected in the scenic spot can be formed to carry out targeted marketing strategies for the tourists in the Beijing-Tianjin-Hebei region. The construction of Xiong'an New District and the Beijing-Australia Winter Olympics will promote the expansion of the high-speed railway network to the northwestern region of Beijing-Tianjin-Hebei, promote tourism development in the northwestern region of Beijing-Tianjin-Hebei, and balance the North-South equilibrium of the Beijing-Tianjin-Hebei tourism market. The dynamic mechanism of Xiong'an New District's influence on Beijing-Tianjin-Hebei tourism cooperation is mainly the result of the joint action of government regulation mechanism and market supply and demand mechanism. The two complement each other and play a role together to form a thrust in the Xiong'an New District to promote the balance of tourism development in Beijing, Tianjin and Hebei.

References

- [1] Li Dengke. Discussion on Tourism Development Trends in Beijing-Tianjin-Hebei Region[J]. *Tourism Journal*, 1988(02): 53-57. "In Chinese"
- [2] Dai Juan,Zhang Shihui.Discussion on Regional Tourism Development Cooperation in Beijing-Tianjin-Hebei Region[J].*Special Zone Economy*,2005(11):149-150. "In Chinese"
- [3] Zhang Yuling. Research on Tourism Cooperation Model and Mechanism in Beijing-Tianjin-Hebei Region [D]. Beijing Second Foreign Languages Institute, 2006. "In Chinese"
- [4] Gu Guanpeng, Wang Yucheng, Xing Huibin, Kong Xuhong. Analysis of the Development Strategy of Tourism Industry in Hebei Province during the Eleventh Five-Year Plan[J].*Commercial Research*,2006(20):179-182. "In Chinese"
- [5] MU Ruili, HUANG Zhiying. Analysis and Mechanism Construction of Beijing-Tianjin-Hebei Tourism Cooperation [J].*Shopping Modernization*, 2008(05): 232-233. "In Chinese"
- [6] Zhou Desheng, Liu Chunling, Li Yanguang. Research on the Development of Beijing-Tianjin-Hebei Tourism Industry Cluster Based on Cooperative Game[J].*Commercial Times*,2009(26):112-113. "In Chinese"
- [7] LI Yonggang. Evaluation of Urban Tourism Industry Competitiveness in Beijing-Tianjin-Hebei Metropolitan Area[J].*Journal of Hebei Institute of Technology(Social Science Edition)*,2010,10(01):71-73. "In Chinese"
- [8] LIU Yuqing, XU Hong. Research on the Enhancement of Tourism Destination Competitiveness Based on Supply Chain Integration——Taking Beijing, Tianjin and Hebei Regional Tourism Destinations as an Example[J]. *Journal of Qingdao Hospital Management Vocational and Technical College*, 2010, 2(02) :1-8. "In Chinese"
- [9] Xu Chengwei, Zhong Zhangqi, Wang Wei. Research on the Construction of the Core Tourism Circle of Beijing, Tianjin and Hebei Based on GIS[J]. *Area Research and Development*, 2015, 34(02): 103-107+130. "In Chinese"
- [10] Editorial Department of the journal, Xiao Jincheng, Guo Kesha, Lu Jun, Liu Bingzhen, Li

Lanbing, Yin Cunyi, Tian Xuebin, Zhang Gui, Zhou Mi, Sun Zhe. The Path Choice of the Strategic Development of Xiongan New Area——“Xiong New District and Beijing Collaborative Development of Tianjin and Hebei: Theory and Policy” High-end Forum Experts' Speeches (I) [J]. Economics and Management, 2017, 31 (03): 6-12. ”In Chinese”

[11] Yang Lihua, Liu Na, Bai Cuiling. Research on the Spatial Structure of Tourism Economy in Beijing and Tianjin[J]. Geography Science, 2018, 38(03): 394-401.J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68-73. ”In Chinese”