The Spatiotemporal Differentiation and Causes of the Evolution of Enterprise Networks in Guangdong Coastal Economic Cities

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Abstract: China proposes innovation, coordination and green development. The new development idea is an open and shared development idea, which is the guiding ideology and focus of development. In terms of space and time in the future, high-quality development has become the theme and melody of an era, as well as an overall demand. With the development of tourism industry, the development of tourism industry in major cities in the coastal areas of Guangdong has gradually become a hot spot in the fields of geography, tourism, marine protection, etc. With the implementation of strategies such as "marine development" and "marine environment" in China, the "time-space difference" in the evolution of the "industrial network structure" in coastal areas is the "subject of resource assessment"; Evaluation, development efficiency, behavior and perception are gradually deepened. In terms of the spatiotemporal evolution and influence factors of the network, the paper uses social network theory and social network theory to comprehensively describe the level, disequilibrium and agglomeration characteristics of the corporate network in Guangdong coastal cities, and discusses the spatiotemporal differences, causes and impacts of the corporate network in Guangdong coastal cities from multiple perspectives.

Keywords: Coastal Cities; Internet Technology; Time Difference; Tourism

1. Introduction

High-quality development of Guangdong's coastal areas is an inevitable requirement of development in recent years. It is necessary to clarify the development system, development trend and development ideas; The design of space is discussed in depth. In a word, there are a lot of results and methods for the evaluation of development efficiency, tourist behavior perception and development mode in the coastal areas of Guangdong, but the content of the evaluation of high-quality development is relatively lacking; On this basis, this paper analyzes the high development space and spatial distribution of Guangdong coastal regions. Under this background, the high quality of Guangdong coastal areas was evaluated from four different perspectives, and 14 typical cases of Guangdong coastal areas were selected to study their spatial distribution using entropy weight method and GIS technology; In order to comply with the requirements of the "Fourteenth Five-Year Plan" development strategy and high-quality development strategy, combined with the industrial development and scientific and technological innovation in the coastal areas of Guangdong Province, the development countermeasures are proposed.

1.1 Research methods

Based on the connotation of high-quality tourism development and the principle of BSC method, and on the basis of referring to relevant literature, the evaluation system of high-quality tourism development in Guangdong is constructed from four perspectives, in accordance with the principles of comprehensiveness, accessibility and metrology.

1.2 Index analysis

Finance mainly involves the evolution quality of the economic development enterprise network in Guangdong coastal economic cities and its impact on the economy, taking tourism as an example. The main indicators include tourism foreign exchange income, domestic tourism income, per capita GDP, tourism business income, etc. The domestic and foreign tourism income reflects the economic productivity of the coastal economic cities in Guangdong, and can also analyze the degree of tourism income of domestic and foreign tourists.

Customers mainly consider the development quality of domestic and foreign tourists and local residents. The main indicators include the number of foreign tourists received, the number of domestic tourists received, the change of Engel's coefficient, and the per capita disposable income. The analysis of the change of Engel's coefficient and per capita disposable income of local residents is mainly to see whether the development of coastal tourism can promote the income and quality of life of local residents.

Learning and growth mainly focuses on economic growth and technological innovation. emphasizing the connotative development of tourism and the transformation of tourism mode. The analysis of the proportion of science and technology expenditure in financial expenditure is mainly because science and technology is the primary productive force. Only by focusing on the investment in science and technology can we achieve better sustainable development and high-quality development.

1.3 Entropy weight method

According to the basic principles of information theory, information is a measure of the degree of order of the system, and entropy is a measure of the degree of disorder of the system. According to the definition of information entropy, entropy value can be used to judge the degree of dispersion of an indicator. The smaller the information entropy value, the greater the degree of dispersion of the indicator, and the greater the impact of the indicator on the comprehensive evaluation (i.e., the weight). Suppose the system has n evaluation indicators and m evaluation objects, and x_{ij} represents the value of the jth evaluation indicator of the ith city (i=1,2,3... n; j=1,2,3... m). The calculation steps and formulas are mainly referred to. Table 2 shows the weights of the indicators of the high-quality measurement system of coastal economic cities in Guangdong Province from 2014 to 2018 calculated by the entropy weight method.

2. Data source

The data used in this study mainly include land use/cover data and socio-economic data. The land use/cover data mainly adopts the GULUC-30 product developed by Kuang and others, which is downloaded from the National Integrated Earth Observation Data Platform （ http://www.chinageos ）

3. Geographic analysis

The coastal zone is the intersection of land and sea, with superior resources and environmental conditions. More than half of the world's population lives within 60 km of the coastline. Two thirds of the world's large cities with more than 1.6 million people.
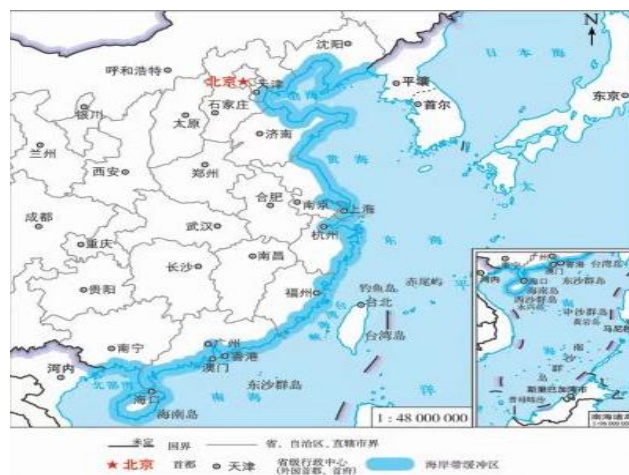

Figure 1. Schematic representation of the study area

China's coastal areas have always been the core areas of China. The expansion of cities in coastal areas is larger than that in most

inland cities. The ecological conditions of land and sea are unique, and they are extremely vulnerable to natural disasters and man-made damage . Large-scale and long-term satellite remote sensing monitoring and quantitative research on the land use quality of cities in coastal zone and coastal zone are important means to improve the land use rate and promote the development of urban residential environment.

At present, the study of urban expansion in coastal zone has been widely concerned by scholars. The process of urban spatial expansion in coastal cities is studied, and it is found that the reclamation of land for urban construction encroaches on a large number of sea areas.The research shows that the scale of construction land in the urban agglomeration of the Yangtze River Delta is also developing towards a multi-center trend.

Therefore, the spatial differentiation of urban expansion and urban land coverage in China's coastal areas from 2000 to 2020 has been studied from various angles. The global urban land use/cover change data (GULUC-30) with a spatial resolution of 30 meters is adopted, and the cities and towns in the buffer zone of 50 kilometers along the coast are taken as the study area, based on the expansion rate and intensity of China's coastal areas, the evolution characteristics and spatial differences of the expansion and the inner surface cover structure of China's coastal areas, and the development level and land use efficiency are measured by indicators such as land growth and per capita GDP; Provide technical support for the sustainable development of coastal areas.

4. Guangzhou coastal enterprises take the analysis of the driving factors of the evolution of the spatial organization network of other coastal cities as an example

Enterprise expansion mode and organizational structure adjustment. The expansion mode of enterprises can be divided into contact expansion and hierarchical expansion. The former is the expansion of enterprise organizations from near to far geographically, and the latter is the expansion of enterprise organizations according to the city level.

The layout shows a reverse order of hierarchical expansion. There are different expansion channels for Chinese enterprises. The expansion of state-owned enterprises follows the institutional channel and is restricted by administrative forces.

Regional assets and infrastructure. Regional assets are the prerequisite internal conditions for regional development, derived from the economies of scale and scope formed by "technology-organization-region".

5. Discussion

At present, the high-tech industries in the new town are concentrated in the location with technology priority. The industrial agglomeration and creative atmosphere have a positive effect on its spatial layout, while the construction environment, such as roads and commerce, is attractive to it. The transportation hubs such as airports and high-speed railway stations have no obvious effect on the enterprise distribution. Under the influence of the brand, the gathering speed of the company has accelerated, but the service level and construction conditions of the business are not perfect. The new town has a vast territory and a small population. Although it has not been completely completed, the cost of commercial operation is very low, and it is easy to attract a large number of Internet companies.

Conclusion

Therefore, in the future, we can accelerate the efficiency of scientific research and operation of Guangdong coastal economic cities, improve their business environment, and promote their positive entrepreneurial atmosphere; Improve the basic supporting facilities and the accessibility of cities in the high-tech industry cluster areas, gradually integrate high-tech industries into the hinterland of the new city, and promote the integration of industries and cities; By taking advantage of the spatial differences in the evolution and development of enterprise networks in major cities in the coastal areas of Guangdong, the synergy between enterprises has been strengthened, and the corridor resources have been fully utilized to connect with the Yangtze River Delta urban agglomeration, providing support for important industrial bases in the coastal areas of Guangdong.

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