Measurement and Comparative Analysis of High Quality Development Level in Beibu Gulf Economic Zone

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Abstract: This paper constructs 15 index evaluation system of high-quality economic development according to the five development concepts: innovation, coordination, green, opening and sharing, and measures the high-quality development level of Beibu Gulf Economic Zone by entropy method. The results show that: the high-quality development level of Beibu Bay Economic Zone has been steadily improved during the sample period, but the development level and growth rate of each city are different, and the regional development is unbalanced; the comprehensive scores of innovation, green, coordination, opening and sharing of each city have significant spatial distribution differences, and the indicators of the five dimensions vary in the trend, which is also different for improving the Beibu Gulf economy The contribution of high quality development level of regional economy is different.

1. Introduction

The research shows that the contribution rate of Beibu Gulf Economic Zone to Guangxi's economic growth is 48.52%, which is not only an important engine to support Guangxi's rapid development, but also one of the fastest growing coastal areas in China. However, in this process, the development of Beibu Gulf Economic Zone is still facing some problems, such as the slow upgrading of industrial structure, serious ecological environment pollution and unbalanced regional development, which seriously restrict the improvement of the development level of Beibu Gulf Economic Zone. Therefore, this paper, combining the five development concepts, clarifies the characteristics of high-quality development and distribution in Beibu Gulf Economic Zone, which is of great theoretical and practical significance to promote its high-quality development

2. Construction of Evaluation Index System and Evaluation Method

The report of the 19th National Congress of the Communist Party of China points out that development must be scientific development, and must unswervingly implement innovation and innovation.

Therefore, this paper takes the five dimensions of innovation, coordination, green, opening and sharing as the first level indicators, and uses the relevant 15 secondary indicators to build a comprehensive evaluation system of high-quality development of Beibu Gulf Economic Zone. The details are as follows.

First, innovation, as the first driving force of development, is an important support to enhance the comprehensive national strength. Secondly, coordination, as an endogenous feature, is the core element of high-quality economic development. Based on the availability and representativeness of the data, the selected basic indicators include consumer price index, urban registered unemployment rate and urban population density, the first two belong to the inverse index, and the second one belongs to the positive index; third, green as a universal form can judge the sustainability of economic development. Therefore, this paper uses the green coverage rate of built-up area, harmless treatment rate of domestic waste and industrial wastewater discharge to measure, the first two

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belong to positive indicators, and the latter one belongs to negative indicators; fourth, opening up is the only way, and open development is a necessary factor for high-quality economic development. This paper uses the total amount of import and export, the actual amount of foreign direct investment and the total domestic tourism income as the indicators of the opening index, which are all positive indicators; fifth, sharing as the fundamental purpose, is also the fundamental goal of high-quality economic development, which can solve the problem of fairness in high-quality economic development. This paper selects education expenditure, public health expenditure, urban per capita housing construction area and per capita GDP as the measurement indicators, which are all positive indicators.

The commonly used comprehensive evaluation methods are principal component analysis, grey correlation analysis and entropy method. Zhao Li et al. (2012) [1] suggested that the entropy method is more suitable for evaluating one or more time periods, so this paper chooses the entropy method of objective weighting, which is a method to determine the index weight according to the amount of information contained in each index value. Due to the limited space, the calculation steps are described in Liu yaxue [2].

3. Analysis on the Measurement Results of High Quality Development Level in Beibu Gulf Economic Zone

3.1 The Results and Analysis of the Comprehensive Level of High Quality Development in Beibu Gulf Economic Zone

According to figure 1, on the whole, the high-quality economic development index of Beibu Gulf Economic Zone showed a fluctuating upward trend. From 2011 to 2014, except Fangchenggang, the changes of other cities fluctuated repeatedly in a small range. Although there were small fluctuations after 2014, the overall growth was stable. In order to explain the development trend of each city, this paper divides each city into high-speed group (> 20%), medium speed group (10% - 20%) and low-speed group (< 10%) according to the average annual growth rate. The cities in the high-speed group are Fangchenggang and Nanning, with an average annual growth rate of 31% and 21% respectively. Taking Fangchenggang as an example, except for a small decline in 2015, its comprehensive index is on the rise in other years, which is mainly due to the good performance of open development and sharing development, the rapid increase of its “total import and export volume” and “actual foreign direct investment”, and the good development trend of export-oriented economy. The cities in the medium speed group include Qinzhou, Yulin and Beihai, with an average annual growth rate of 15%, 13% and 17% respectively. The high-quality economic development index of these three cities fluctuated slightly from 2011 to 2018, but it rose steadily as a whole. Finally, the city in the low speed group is Chongzuo, with a comprehensive score of 0.09. There has been a downward trend in different years, and the overall fluctuation is relatively large.

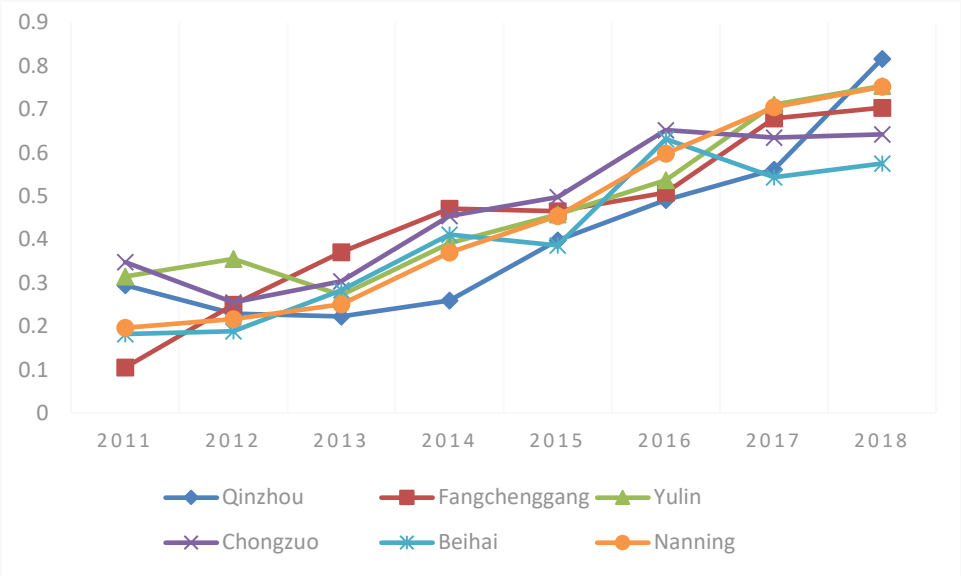

Fig.1 Change Trend of High Quality Economic Development Index of Beibu Gulf Economic Zone

3.2 Analysis on Dynamic Results of High Quality Subsystem Development in Beibu Gulf Economic Zone

Innovation aspect:It can be found that the innovation level space difference of each city in Beibu Gulf Economic Zone is large, the highest comprehensive score is Yulin (0.09), the lowest score is North Sea (0.03), and the latter is only 28% of the former. In recent years, Yulin City has formed a new material industry chain with China gold company and Yinyi company as the leading point and industrial projects as the starting point of transportation logistics and Longtan Industrial Park, and a recycling economic chain of renewable resources with guijinxuan and Hanlong as the main body. The following were Fangchenggang, Chongzuo, Nanning and Qinzhou, and their comprehensive scores were 0.08, 0.071, 0.07 and 0.06 in turn.

Coordination aspect:coordinated development level of Beibu Gulf Economic Zone from 2011 to 2017. it can be seen that the change trend of coordinated development index of each city has a relatively significant periodic feature, and the rising and descending trend fluctuates obviously. The coordinated development level ranking in 2018 is from high to low, including Fangchenggang, Nanning, Yulin, Beihai, Chongzuo and Qinzhou. Take Fangchenggang as an example, the coordinated development comprehensive index reached the maximum value (0.17) in 2018, ranking first. The reason for the high level of coordinated development of the city is that in 2018, the city, in accordance with the requirements of high-quality development, takes the supply side structural reform as the main line, and makes every effort to do well in various work such as stable growth, promoting reform, structural adjustment, benefiting people's livelihood and preventing risks

Green aspect:It can be seen that the green development index of various cities in the Beibu Gulf Economic Zone fluctuates in a relatively concentrated range, ranging from 0.02 to 0.12. This shows that the Beibu Gulf Economic Zone’s initiatives to protect the environment and rationally use resources have achieved good results. Protection is highly valued.

Open aspect:The open development trend of cities is different, and the local fluctuation is obvious, which indicates that the open development is not only affected by the outside world, but also affected by the geographical location, economic scale and other conditions. In 2018, most of the top cities in the open development level have the following characteristics: the domestic tourism revenue grows rapidly; the geographical location is superior, the resources are rich, and the environment is beautiful; the total import and export volume and the actual foreign direct investment are increasing year by year.

Sharing aspect: it is found that the shared development index and the high-quality comprehensive index of economy show similar characteristics. It is further confirmed that shared development is the main driving force for the high-quality development of Beibu Gulf Economic

Zone. At the same time, it can be seen that the sharing development level of most cities is on the rise, indicating that these cities have better performance in improving people's welfare and improving infrastructure construction. It is worth noting that Chongzuo has the lowest share development index (0.13), which is far from the average level (0.19). This shows that Chongzuo needs to supplement the short board of shared development to achieve real sense of sharing harmony and people's life happiness.

4. Conclusion

This paper constructs an evaluation index system for the high-quality development of the Beibu Gulf Economic Zone from the five dimensions of innovation, coordination, greenness, openness, and sharing. The entropy method is used to evaluate the comprehensive level of the high-quality development of six cities in the Beibu Gulf Economic Zone from 2011 to 2018. The level of each subsystem is measured, and the following conclusions are obtained:

First, from the perspective of the overall level, the high-quality development of the Beibu Gulf Economic Zone is uneven. In terms of specific cities, Fangchenggang and Nanning have relatively high comprehensive scores, which belong to cities with rapid economic development; Qinzhou, Yulin and Beihai have relatively low comprehensive scores with slight fluctuations, but the overall trend is still on the rise; Chongzuo belongs to low-speed economic development Cities have low overall scores, and overall fluctuations are relatively large.

Second, from the perspective of various subsystems, the six cities in the Beibu Gulf Economic Zone have significant spatial distribution differences in the five dimensions of innovation, green, coordination, openness, and sharing, and the indicators of the five dimensions have different trends. Similarly, there are also differences in their contribution to improving the high-quality economic development of the Beibu Gulf Economic Zone.

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