

Application Model of Data Mining in Economic Analysis of Guangdong, Hong Kong and Macao Dawan Area

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Abstract: The construction of the Great Bay Area of Guangdong, Hong Kong and Macao is one of the important strategic arrangements for China's economic transformation and upgrading. Regional economy is a complex economic form. The imbalance and difference of its development make it very difficult to analyze and judge its economic form. Economic relations are becoming more and more complex as a whole. Combining data mining technology, economic analysis of Guangdong, Hong Kong and Macao Great Bay Area is constructed to improve the efficiency of economic statistics. Guangdong, Hong Kong, Macao and Dawan District and surrounding cities have a significant "core-half-edge" structure and a three-level layer structure. The overall network connection relies too much on the radiation-driven and intermediate bridges of the Hong Kong-Shenzhen network. The contact relies too much on the radiation-driven and intermediate bridges of the Hong Kong-Shenzhen, to give play to the leading role of core cities in technological innovation, promote the seamless nesting of core areas and peripheral areas, and effectively interact with the effective market and the government.

1. Introduction

The concept of "Great Bay Area of Guangdong, Hong Kong and Macao" first appeared in China's national design documents. It was "Vision and Action for Promoting the Co-construction of the Silk Road Economic Belt and the Marine Silk Road in the 21st Century" issued by the National Development and Reform Commission, the Ministry of Foreign Affairs and the Ministry of Commerce under the authorization of the State Council in March 2015 [1]. The construction of Dawan District in Guangdong, Hong Kong and Macao has seven major development foundations: obvious location advantages; differentiated development between Hong Kong and Macao and the mainland; active and developed economy; obvious characteristics of open economy; advanced development characteristics of industrial structure; and preliminary formation of urban agglomerations with international competitiveness [2]. The goal is to build Guangdong, Hong Kong and Macao into a world-class urban agglomeration. Therefore, how to define the application of economic analysis, clarify the spatial organizational structure, and ultimately settle down to the integration of the center and surrounding cities is an important issue in the construction of urban agglomeration in Guangdong, Hong Kong, Macao and Dawan District [3]. As the amount of data increases year by year, the types of data are also increasing, which makes the traditional data statistics methods no longer suitable for the current data statistics environment and needs. Measuring the regional economic differences and their temporal evolution; the economic development process has increased the efficiency of innovation through the spatial agglomeration of innovative factors, thus promoting the development of regional industries. Starting from the theory of growth poles, it is considered that industries with innovative capabilities are more likely to form growth poles in urban economic space [4].

Since the reform and opening up, due to historical and geographical reasons, the Great Bay Area of Guangdong, Hong Kong and Macao has developed rapidly and become one of the core areas supporting China's economy [5]. In recent years, more and more studies have paid attention to the essence of the "Bay Area Economy". It is generally believed that the "Bay Area Economy" is a unique regional integration economic form with international influence formed by the integration of

urban agglomerations and the development of the geographical fusion of the Bay Area on the basis of the harbour and the natural geographical conditions of the Bay Area [6]. Generally speaking, the economy of Guangdong, Hong Kong, Macao and the Great Bay Area enlarges the scale of the industry on the one hand because of the accumulation of a large number of specialized economies; on the other hand, it has diversified economy, which promotes close exchanges among various industries and promotes industrial innovation and integration. The index system of economic development is mostly used in the construction of circular economy index system. At present, the evaluation index system of the comprehensive level of economic development mainly concentrates on the total economic volume, economic structure and economic benefits [7]. In the empirical analysis of economics, data that does not conform to the general laws of economics often appear. These data are abnormal data. The abnormal data is mainly caused by measurement errors, or it may be caused by the intrinsic characteristics of data. The technology is applied to the economic data information statistics, and the data with low integrity and randomness in the database can be effectively counted and analyzed, and a set of statistical data forms that can be reasonably utilized is formed, and the data user is applied to the data and Extraction provides convenience [8].

2. Materials and Methods

The forms of regional economic development are often quite different, and the existing econometric theories and methods are mainly aimed at linear models, thus there is a problem of model setting deviation. Despite the development of econometrics, mature nonlinear modeling methods have been developed. Expand the development space and promote the reform and opening up of the mainland. The "Shenzhen-Hong Kong Link" will be used to promote the integration and development of the capital markets of Shenzhen and Hong Kong and to enhance the radiation capability of the capital markets. The results of applying data mining to empirical tests begin to appear. The economic development path, economic foundation, industrial structure, talent and technology level, and land resources are all different. In particular, the social systems of the Mainland and Hong Kong and Macao are different, which will affect the economic development of the Greater Bay Area. The economic development characteristics of Guangdong, Hong Kong and Macao Dawan District under data mining are shown in Table 1. Expand the spatial scope of the Bay Area economy, and expand and extend along the coastline to the land under the driving effect of the Bay Area economy, and accelerate the integration and development of the entire market economy.

Table 1 Characteristics of Economic Development in Dawan District of Guangdong, Hong Kong and Macao Based on Data Mining

	Change	Features
Trends in economic index volatility	15.30	14.71
Changes in regional economic disparities	13.95	12.75
Hong Kong and Macao two-tier centres changed to Hong Kong, Macao, Guangzhou and Shenzhen four-tier centres	16.72	17.13
The regional economic level shows an inverted U-shaped trend along the inner bay.	15.98	16.22

The development of data is analyzed. According to the characteristics of classified analysis, the index of the degree of dependence is particularly divided, that is, the index that contributes the most to the classification, such as the impact of characteristic industries on the overall economic development. Promote the regional comprehensive cooperation in the level of internationalization, industrial structure, urban function and the quality of human settlements environment, and strive to build the region into a gathering place of global talent, a dynamic area of global innovation and entrepreneurship, and an international Bay area. Based on economic statistics. But different management departments have different forms of management, so the demand for economic statistics is different. The application of data mining technology in economic statistics can transform data into different forms. The spatial distribution of the node centering degree reflecting

the node status and the near center degree reflecting the degree of the center basically verify the core edge structure characteristics in the spatial linkage analysis. Taking the enterprise as the main body to enhance the ability of independent innovation, taking the industrial chain as the driving force to create an innovative industrial cluster, the high-tech and high-end manufacturing seamlessly connect, the core area and the peripheral area deeply interact with the regional collaborative innovation path, showing the Guangdong, Hong Kong and Macao Dawan District The vitality of urban agglomerations and innovative belts. At the same time, the cooperation between Guangdong, Hong Kong and Macao has further deepened. The central government has issued a series of framework agreements for Guangdong, Hong Kong and Macao, and the cooperation between Guangdong, Hong Kong and Macao has entered a new stage, which has promoted the integration of economic, cultural, social and living aspects of the three places.

The construction of Dawan District in Guangdong, Hong Kong and Macao will bring many new investment opportunities, but how to activate the stock assets is also an unavoidable problem; moreover, taking advantage of the advantages of more developed financial industry and more active system innovation in the region, we will explore the market-oriented and legalized debt restructuring model and improve the factor market. However, cooperation is not an end but a condition. The purpose of the Dawan District of Guangdong, Hong Kong and Macao is not to build a demonstration zone of cooperation. The key is to grasp three key positioning: the important engine of world economic growth, the innovation center of international science and technology industry, and the world famous high-quality life circle. In the development of regional economy, dynamic economy often changes regularly or irregularly with the change of time. Data mining can be modeled using evolutionary analysis, allowing dynamic economic laws to be presented in a time-series model. For data mining collection, the main steps include defining the target phase, the data preparation phase, the data mining phase, and the data evaluation and result display phases. After the system processes and analyzes, the data is sent to the data bus; the publishing system acquires the required data from the data bus according to the release requirements, and publishes according to the relevant definition. Accelerate the construction of research institutions and experimental bases that meet the requirements of innovative industries, and establish a mechanism for the introduction and sharing of high-end talents worldwide, such as the implementation of the “elite program” to explore and build “talent + projects”.

3. Result Analysis and Discussion

From the perspective of data mining, regional economic development needs to find the same type of development model, analyze the development trend within the category, compare the differences among them, and then formulate a targeted development model, which is the important role of differentiation research in regional economic development. The data mining preparation stage includes three steps: data selection, data processing and data change. Through data selection and data processing, relevant data information that fully meets the requirements of data statistics can be mined. The open and diversified information resource publishing platform of the Guangdong, Hong Kong, Macau and Dawan District markets also provides real-time and effective information for customers, enabling customers to keep abreast of market dynamics. From the perspective of Guangdong, Hong Kong and Macao, we must also improve the coordination mechanism at the provincial level, set up a daily working organization in Dawan District, create an international business environment, and increase support for scientific and technological research and development activities. Promote the optimal allocation of resources, effectively focus on the innovative functions of core cities, give play to the role of technology spillovers, and promote the coordinated transformation and upgrading of peripheral regions.

In the construction of Guangdong, Hong Kong, Macao and the Great Bay Area, a very important aspect is to explore and solve the financing needs of urbanization and form a sustainable financing mechanism, which requires good cooperation between finance and finance, government and market. From the perspective of industrial layout or spatial layout, in the future, related industrial layout will be developed to the West Bank of the Pearl River Estuary in various ways, with more space to

undertake and greater radiation function. Shortening the distance between internal and external space can effectively reduce the cost of factor flow, accelerate the flow of various resource elements among different regions, and effectively promote the integration and development of the whole economy. Eliminate the institutional obstacles to facilitate the flow of factors and the rational division of labor among industries, break down regional barriers and promote the renewal of the cooperation mode between Guangdong, Hong Kong and Macao. The similar developments in the same region were identified, and then the results of cluster analysis were used to perform targeted learning classification using data mining to correct the clustering results. Defining data mining objectives and defining the degree of adaptation of the target have a direct impact on the effectiveness and quality of the entire data mining, so it needs to be sufficient. Exchange information through the information platform, re-publish their own information according to their needs, and run their own business, thus ensuring the accuracy and timeliness of the information.

The geographical location of the cities in Dawan District of Guangdong, Hong Kong and Macao is different. The cities can be divided into port-vicinity and non-port-vicinity. The export-oriented economy is the main area. There are many convenient conditions for the development of port-vicinity cities. In fact, regional economic system is a complete system. Sometimes it can not be expressed by a simple equation or model. At this time, economic variables or samples need to be classified and clustered, and economic phenomena can be summed up in our well-known knowledge system. Deep enough to mine valuable information in the database, through data mining technology, can statistics and process massive data, through data mining technology, the original chaotic data will be processed scientifically, effectively and informationally. In addition, the current economic market infrastructure is divided in terms of construction and supervision. Therefore, according to the central requirements, we will promote the construction planning and supervision of important infrastructure in the economic market, and strengthen economic infrastructure reform and interconnection. There is also homogenization competition within the region. High-end manufacturing, electronic information, and modern logistics are the focus of the next step of industrial development. In the construction of Guangdong, Hong Kong, Macao and Dawan District, industry convergence and homogenization competition should be avoided.

4. Conclusion

In this paper, the application model of data mining in economic analysis of Guangdong, Hong Kong and Macao Bay Area is analyzed. Data mining is an important way to obtain general rules from complex data and environment. Regional economic analysis is a complex work, with many non-linear and differential development models. For the application of data mining technology to economic statistics, data mining, collection, statistics, processing, has a specific data mining process. Incremental optimization should attach equal importance to stock adjustment, optimize market economy resource allocation, exploit market-oriented and legalized debt restructuring mode, perfect factor market, and form a resource optimal allocation mode combining incremental optimization and stock adjustment, taking advantage of the advantages of more developed financial industry and more active system innovation in the region. To realize the complex evolution of the spatial structure within the organization, increase the density of spatial connections, and promote the transformation of the spatial structure of urban agglomerations from a layer structure to a complex network structure. Unblock the regional industrial transfer, integration, and channel, establish a revenue distribution system for projects such as cross-regional investment, park construction, and scientific and technological achievements, and improve the level of industrial docking cooperation between Guangdong, Hong Kong and Macau. Actively seize the opportunity of development, find the necessary combination points of the country, expand the development space, grasp its own positioning in the development process of Guangdong, Hong Kong and Macao Dawan District, and explore the correct path to achieve faster development.

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