Research Article

Development Trend Prediction of Chengdu Plain Economic Zone Based on Multiple Linear Regression Grey Correlation Degree

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Urban agglomeration is the mainstream trend of urban development in the world. It is also the main form of new urbanization in China and an important platform to participate in international competition and cooperation. The pattern of industrial division of labor has basically taken shape in Chengdu Plain Economic Zone, and the industrial cooperation system has been gradually established. However, the phenomenon of industrial isomorphism is still prominent. In the process of promoting coordinated industrial development, there are still some problems such as disunity of understanding, imperfect mechanism, and imperfect environment. The regional economic potential is influenced by too many entities and the dynamic changes of economic structure, and the change ratio is highly nonlinear. In this paper, a MLR-GCD (Multiple Linear Regression Grey Correlation Degree) prediction model for the development trend of Chengdu Plain Economic Zone is proposed. In the decision-making process, MLR (multiple linear regression) method is introduced to construct the GCD (Grey Correlation Degree) of training economic-related data set, and then the GCD is pruned to transform it into standard decision-making data. The experimental results show that compared with other prediction models, the improved model has higher accuracy of regional economic prediction, can quickly and accurately predict the development potential trend of Chengdu Plain Economic Zone, and has important application value.

1. Introduction

Globalization, informationization, and regional integration are reshaping the pattern of world economic development. The spatial scale of urbanization development has broken through the scope of single cities, showing the trend of urban regionalization with the integrated development of urban agglomerations as an important carrier [1, 2]. As an important group of urban agglomerations in Chengdu-Chongqing Economic Zone, Chengdu Plain Economic Zone, with Chengdu as its core, covers 8 cities and 65 counties (cities and districts) such as Chengdu, Deyang, Mianyang, Meishan, Ziyang, Suining, Ya 'an, and Leshan and has been subject to problems such as urban system faults, homogeneous competition in the region, and division of administrative barriers [3]. In order to promote the balanced and coordinated development of regional economy

and society, Chengdu Plain Economic Zone can further clarify the functional orientation of cities, build multicenter urban agglomerations, promote regional integration, and promote new urbanization.

Chengdu should identify key industries according to the level of carrying capacity, factor resource endowment, and industrial development potential, strengthen complementary cooperation with surrounding cities, and take the lead in building an industrial system with regional integration and complete chain. It is necessary to adjust the allocation of resources through the market and gradually transfer the resources and labor-intensive low-end and low value-added industries in Chengdu to other regions to promote industrial transformation and upgrading [4, 5]. Regional coordinated development generally goes through three stages of "market induction-government coordination-market leading," and the transition from market induction to government leading

requires an authoritative overall coordination mechanism. At present, Chengdu Plain Economic Zone still lacks a strong overall coordination mechanism, which affects the policy implementation effect and promotion [6]. With the rapid development of macroeconomy in Chengdu Plain Economic Zone, the regional economic differences have always existed and are expanding. Expanding regional economic differences will make capital, population, technology, and so on continuously concentrated in developed regions, resulting in the emergence of "urban problems," which will lead to the loss of funds needed for the development of underdeveloped regions, especially the large number of people with innovative ability and pioneering spirit moving to developed regions, resulting in the "time-out" effect, which will make the economic growth of underdeveloped regions slow, decline, or stagnate [7, 8]. Regional economy is random and complex, and its development is closely related to economic, political, social, and other influencing factors. These influencing factors have complex nonlinear relationships, which makes the relevant data reflecting regional economic development show certain nonlinearity. At this time, it is impossible to obtain accurate results by using traditional forecasting techniques [9].

For a long time, economists have done a lot of research on economic growth. They believe that production activities in any era cannot be carried out of thin air without a certain material and technical foundation, and the current production must be based on past production achievements and accumulated capital in the past [10]. Generally speaking, the more abundant the accumulated capital at the end of last period, the greater the ability to produce products in this period, and the capital accumulation has a great role in promoting economic growth. In order to solve the disadvantages of traditional forecasting methods, this paper proposes a forecasting model of the development trend of Chengdu Plain Economic Zone based on MLR-GCD (Multiple Linear Regression Grey Correlation Degree). MLR (multiple linear regression) is used to solve the nonlinear characteristics of regional economic impact indicators. In case of data fluctuation, the data characteristics are classified and the noise factors are filtered to solve the problems existing in traditional methods. The experimental results show that compared with other prediction modules, this model has higher accuracy of regional economic prediction, can quickly and accurately predict the development potential trend of Chengdu Plain Economic Zone, and has important application value.

2. Related Work

Literature [11] takes urban agglomerations as an example to analyze that it is an inevitable trend for them to move towards spatial coordinated development under the new urbanization and new economic normal and emphasizes the path of spatial pattern reconstruction of urban agglomerations' coordinated development mode. In literature [12], according to the five development concepts of innovation, coordination, green, openness, and sharing, five related indexes are constructed: development index, synergy index,

ecological civilization index, population development index, and enterprise development index. Through this index system, the coordinated development status of Beijing-Tianjin-Hebei is comprehensively measured and analyzed, and it is proposed that Beijing-Tianjin-Hebei region should accelerate industrial transformation and upgrading, give full play to regional advantages, and make up for the shortcomings of development. Literature [13] summarizes the connotation of related urban agglomerations at home and abroad and defines urban agglomerations as urban "complexes" with close economic and social ties and reasonable spatial structure, functional structure, and scale structure, which are centered on one or several competitive big cities, relying on infrastructure conditions such as transportation and communication, and generally have five characteristics of agglomeration, networking, clustering, openness, and symbiosis. In literatures [14, 15], based on the Haken model, the empirical analysis of the driving factors for the coordinated economic development of 29 provinces in China in stages shows that the overall coordinated economic development of China's regions has entered a new stage, summarizes the connotation and characteristics of coordinated regional economic development, and deeply analyzes the three driving factors of coordinated regional economic development: regional comparative advantage, regional economic ties, and regional industrial division of labor. In literature [16], based on symbiosis theory, this paper constructs a multicenter spatial structure model, analyzes the structure, mechanism, and mode of regional multicenter symbiosis, and puts forward that promoting regional multicenter collaborative symbiosis can promote the sustained and rapid development of the whole city circle.

The international research on regional economic differences mainly regards developing countries and developed countries as two major regions and determines the degree of differences between the two major regions and the main determinants of differences. Literature [17] holds that the government's role is the root of the lasting and extensive cross-border differences in per capita income and economic growth rate. The view of "conditional convergence" put forward by literature [18] holds that developing countries have no long-term growth potential, which leads to the divergence of regional disparities. Literature [19] puts forward the "leapfrog" growth model of international competition and holds that it is entirely possible for developing countries to catch up with or surpass developed countries through favorable technology development policies and seize the advantages of backwardness. In literature [20], using AHP (analytic hierarchy process), it is concluded that there are four gradients of regional economic differences in cities. Literature [21] holds that the urban developed economic circle, which measures the regional differences in the city by the industrial development stage, is in the period of transition from the intermediate stage to the advanced stage of industrialization. Literature [22] holds that historical reasons, differences in transportation and location conditions, the role of economic structure factors, the imbalance of urban system, and the influence of regional economic development strategy have led to the formation of

differences. Literature [23] shows that there is an important relationship between economic aggregate and industrial structure by analyzing the relationship between economic aggregate and industrial structure in different countries and regions. Literature [24] found that in each stage of economic development, there are different economic structures corresponding to the level of economic development. If the two cannot form a correspondence, there is a certain deviation between the industrial structure and the standard value of this country. Literature [25] adds factors such as industrial transportation, production, and sales layout to the location triangle theory of cost minimization and extends the law of agricultural production layout to the spatial activities of industrial economy, which is a symbol of historical progress. Literature [26] puts forward the economic fuzzy definition of the metropolitan area, which defines the metropolitan area as the area where the central city and the periphery have close economic and social ties with the central city and the neighboring counties (cities) with high nonagricultural level are combined.

3. Research Method

3.1. Analysis on the Economic Structure and Internal Differences of Chengdu Plain Economic Zone. Promoting the construction of cooperative parks together is an important form of industrial cooperation in Chengdu Plain Economic Zone. Co-construction of industrial parks is conducive to giving full play to the regional advantages, making full use of the mineral resources, land, labor, and other resource conditions of the partners, strengthening inter-regional industrial linkage, extending the industrial chain, forming industrial clusters with rational regional division of labor, enhancing regional competitiveness, promoting regional coordinated development, and realizing regional economic integration. With the construction of Chengdu Second International Airport, the Chengdu Plain Economic Zone will be more closely linked with domestic and foreign countries. In addition, infrastructure networks such as water supply, power supply, and gas supply are interconnected in Chengdu Plain Economic Zone, forming a unified natural gas transmission and refined oil pipeline network.

A continuous "siphon" effect on the dominant elements in Chengdu is formed, and in practice it is shown that the polarization effect of the city is far greater than its diffusion effect. Secondary cities cannot effectively relieve the functions of core cities and radiate to drive the development of surrounding small- and medium-sized cities and towns, and the inter-regional development within economic zones is extremely uneven. This is not conducive to Chengdu, the central city, continuously improving its urban energy level and participating in global competition, nor to the follow-up development and healthy development of other surrounding cities. At the same time, the strong "path stickiness" in the existing development pattern also restricts the region from moving towards coordinated development.

The seven major cities of Chengdu Plain Economic Zone are scattered in Chengdu Plain and its surrounding areas, and Chengdu, as the central city of the plain economic circle,

is located in the center of the whole region. In the process of economic development, there are obvious differences in economic strength and economic relations between cities, which leads to the distribution of different economic and economic structures. See Figure 1 for the transportation distance between six major cities in Chengdu Plain Economic Zone and Chengdu.

In this economic structure of Chengdu Plain Economic Zone based on transportation distance, Chengdu, the central city, is regarded as the core layer, and the transportation links in the core layer are relatively close. Mianyang, Ya 'an, and Leshan, which are within 100 to 150 kilometers from Chengdu, are regarded as radiation layers. The traffic distance between this circle city and Chengdu is relatively long and the traffic time is relatively long.

Obviously, this single standard of dividing the economic circle circle with traffic distance is a simple division of a complex circle with a single variable and only considers the economic structure of traffic factors, which can not well reflect the internal differences and economic ties of Chengdu Plain Economic Zone.

On the basis of data processing, this paper uses SPSS to cluster and analyze the economic structure of Chengdu Plain Economic Zone. Clustering is the application of some method to classify data with similar properties in research data. Its purpose is to divide a large number of databases into multiple classes. The objects in one class have high similarity, while the data in different classes have low similarity.

Assuming that the threshold T is a positive number, if the distance d_{ij} between any two elements in the set G satisfies

$$d_{ij} \leq T\,(i, j \in G), \tag{1}$$

G is said to form a class for threshold T.

Still, assuming that the threshold T is given as a positive number, if every $i \in G$ in the set G satisfies

$$\frac{1}{n(n-1)} \sum_{j \in G} d_{ij} \leq T \lim_{x \longrightarrow \infty}, \tag{2}$$

where n is the number of elements in the set G, G is called a class for the threshold T.

Let $T, H\,(H > T)$ be two given positive numbers, if the average distance between set elements satisfies

$$\frac{1}{n(n-1)} \sum_{i \in G} \sum_{j \in G} d_{ij} \leq T, d_{ij} \leq H\,(i, j \in G), \tag{3}$$

where n is the number of elements in the set G, it is said that G forms a class for the threshold T, H.

The sample distance measurement method adopted in this paper is square Euclidean distance method. The core of this method is that the squared Euclidean distance between several samples is the sum of squares of the differences between each variable value of each sample, and the calculation formula is as follows:

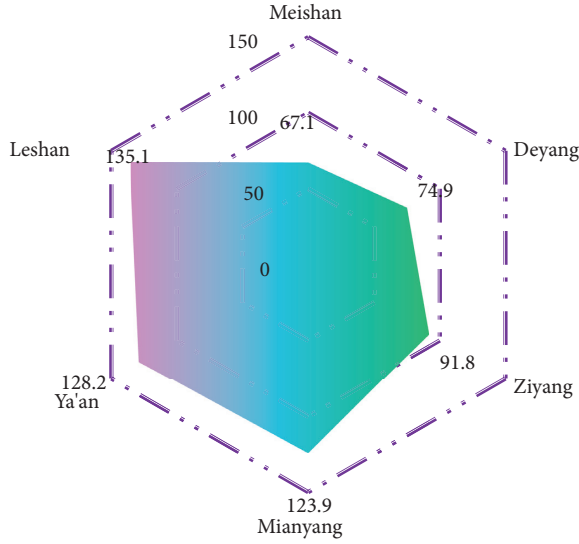$$\text{SEUCLID} = \sum_{i=1}^{k} (x_i - y_i)^2. \tag{4}$$

Figure 1: Transportation distance between six major cities in Chengdu Plain Economic Zone and Chengdu.

3.2. Study on Development Trend Prediction of Chengdu Plain Economic Zone.

Many enterprises in Chengdu Plain Economic Zone, especially many small- and medium-sized private enterprises, either do not pay attention to the relevant measures of the government's "industrial coordination" or do not know the latest content of "industrial coordination" or simply recognize it as a government action that has little to do with themselves or as a preferential policy. As everyone knows, enterprises themselves are participants and interest communities in regional industrial coordination, and they can obtain development elements such as information, technology, capital, science, and technology through institutional arrangement and organizational design of government industrial coordination, so as to realize sustainable development.

Although the coordinated development of industries in Chengdu Plain Economic Zone already has a certain economic foundation, the level of economic development is relatively high, the industrial system is relatively complete, the process of regional market integration is accelerated, and the scientific and technological innovation ability is strong. However, there is still a big gap between the overall development level of Chengdu Plain Economic Zone and the developed coastal areas such as Yangtze River Delta and Pearl River Delta. The unified and open commodity market and factor market in Chengdu Plain Economic Zone have not yet been fully established, industrial isomorphism and local protectionism still exist, the industrial competitiveness is not strong, and the transformation pressure is great. It can be seen that the industrial and economic foundation of Chengdu Plain Economic Zone is not strong, which objectively contributes to the current low level of coordinated industrial development.

GCD (Grey Correlation Degree) is a kind of mathematical theory, which can eliminate the subjective randomness caused by people's dealing with practical problems only by experience and analogy to a certain extent. The purpose is to make research more scientific and mathematical. Based on the use of GCD, the results are more comprehensive, objective, and fair, so the decision-making can be more reasonable and effective. The GCD model establishes the difference information space by obtaining the difference information between sequences.

GCD combines grey absolute correlation degree with grey relative correlation degree, dynamic, and static combination and makes a more comprehensive analysis of GCD, and then we can use ρ_{0i} to represent grey comprehensive correlation degree and $\varepsilon_{0i}, \gamma_{0i}$ to represent ρ_{0i}, which is as follows:

$$\rho_{0i} = \theta\varepsilon_{0i} + (1 - \theta)\lambda_{0i}, \theta \in (0, 6). \tag{5}$$

In this paper, the MLR-GCD model is used to analyze the trend of differences in Chengdu Plain Economic Zone, and the model is adjusted. In the literature of studying the differences of Chengdu plain economic zones, most scholars use the change and decomposition of per capita to describe its change characteristics and laws. In view of the limitations of literature and data collection, this paper adjusts the traditional model, so that the model can better depict the development and change trend of Chengdu Plain Economic Zone.

This paper makes MLR analysis with the added value of each industry as independent variable and GDP as dependent variable.

Let the linear regression model be

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_p x_p + \varepsilon. \tag{6}$$

In the above formula, $\beta_0 \ldots \beta_p$ is $p + 1$ unknown parameters, y is the dependent variable, $x_1 \ldots x_p$ is the independent variable, and ε is a random error term.

Usually, the ordinary least square method is used to solve the regression coefficient. Its principle is to minimize the sum of squares of deviations at each observation point, and the solution can be obtained:

$$\begin{cases} \sum(\widehat{\beta}_0 + \widehat{\beta}_1 x_{i1} + \widehat{\beta}_2 x_{i2} + \widehat{\beta}_p x_{ip}) = \sum y_1, \\ \sum(\widehat{\beta}_0 + \widehat{\beta}_1 x_{i1} + \widehat{\beta}_2 x_{i2} + \widehat{\beta}_p x_{ip})x_{i1} = \sum y_i x_{i1}, \\ \vdots \\ \sum(\widehat{\beta}_0 + \widehat{\beta}_1 x_{i1} + \widehat{\beta}_2 x_{i2} + \widehat{\beta}_p x_{ip})x_{ip} = \sum y_i x_{ip}. \end{cases} \tag{7}$$

By solving the equations, the estimated values of $p + 1$ estimated parameters can be obtained. Express the equation in matrix form as follows:

$$(X'X)\widehat{\beta}X'Y. \tag{8}$$

When $(X'X)^{-1}$ exists, the least square estimation of regression parameters can be obtained:

$$\widehat{\beta} = (X'X)^{-1}X'Y. \tag{9}$$

As the internal development of each industry is reasonable, it will also affect the optimization of industrial structure and further affect economic growth. The development status of the primary industry, the secondary

industry, and the tertiary industry can be judged by the GCD between the proportion of internal departments in the output value of each industry and the GDP of this industry. In order to better observe the degree of industrial structure optimization, the degree of GCD between the output value of different industries and their internal sectors is studied.

In turn, the time series of the first, second, and third industries are represented by $A_i, B_i, C_i \, (i = 0, 1, \ldots, m)$, the grey absolute correlation degree is represented by $\varepsilon_i^A, \varepsilon_i^B, \varepsilon_i^C \, (i = 0, 1, \ldots, m)$, the grey relative correlation degree is represented by $\gamma_i^A, \gamma_i^B, \gamma_i^C \, (i = 0, 1, \ldots, m)$, and the grey comprehensive correlation degree is represented by $\rho_i^A, \rho_i^B, \rho_i^C \, (i = 0, 1, \ldots, m)$.

The process of regional economic forecast is shown in Figure 2.

4. Results Analysis and Discussion

Because the economic data of a city is restricted by administrative factors to a certain extent, it cannot reflect the original economic strength and economic development level of the city. Therefore, according to the principle of contiguous districts and cities, this paper selects the district and city data that can best reflect the economic development of the city. The results shown in Figure 3 are calculated by cluster analysis.

According to the abovementioned cluster analysis results of six cities, single-center means that Chengdu, the central city, as the single core of the whole Chengdu Plain Economic Zone, plays a decisive role in the development of the economic circle system, but there is a big gap between the economic and social strength of Chengdu and the subcentral cities. In a short time, Chengdu Plain Economic Zone still relies heavily on the development of Chengdu while Ya 'an City, Meishan City, and Ziyang, which radiate from west to east, run through the east-west axis of Chengdu Plain Economic Zone, thus forming a single-center cross structure.

SPSS statistics is used to make systematic cluster analysis on the economic data statistics of Chengdu Plain Economic Zone. Z-score method is still used to preprocess the data, and then the data are discriminated by Euclidean square distance and intergroup connection method. The results are shown in Figure 4.

The economic development of a radiating city is mainly determined by its economic ties with subcenters and peripheral cities and the level of infrastructure construction with the central city. In recent years, districts, counties, and cities 30 kilometers away from Chengdu have gradually developed into important sources of regional economic growth due to their excellent ecological environment and convenient transportation network, and these cities are playing an increasingly important role in regional economic development.

The spatial structure of Chengdu is mainly distributed in concentric circles. There is a big economic center in Chengdu's five urban areas (central area) and a subcenter (subcentral area), which forms a multifunctional compound economic spatial structure. This division of Chengdu's economic structure better reflects the social and economic differences within Chengdu.
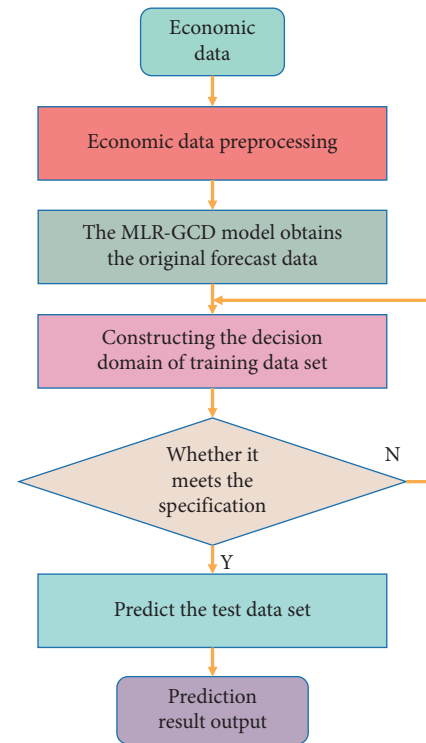

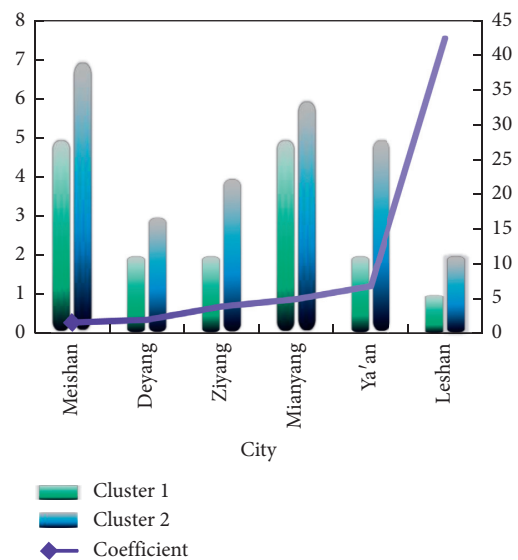FIGURE 2: Process of regional economic forecast.

FIGURE 3: Clustering of economic structure in Chengdu Plain Economic Zone.

In the double-center concentric circle distribution model, the emergence of subcenter cities has driven the compound development of the whole region's economy, and most of the peripheral and radiating cities will be affected by the double-center economic radiation, which is conducive to the flexible and sustainable development of the whole region's economy.

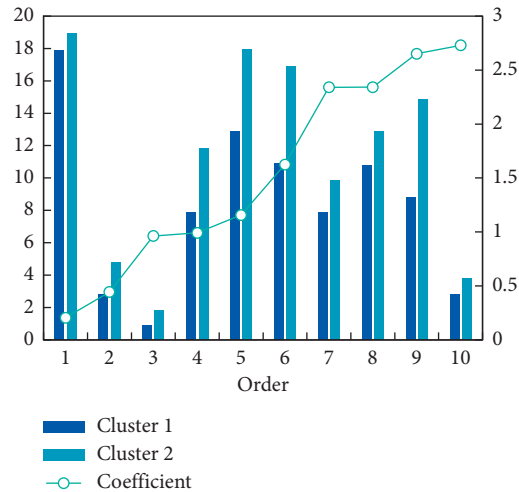In this paper, the economic data of Chengdu Plain Economic Zone in two time periods will be analyzed and

FIGURE 4: Inner clustering of districts, cities, and counties in Chengdu.

studied. The selected methods are PCA (principal component analysis) and multiple regression analysis. Using SPSS statistics software, the principal component factors are first obtained by PCA, and then the comprehensive scores of the principal component factors are calculated by regression analysis. Figure 5 shows the rotating component matrix of gravity intensity in Chengdu Plain Economic Zone from 2010 to 2020.

It can be seen from Figure 5 that the number of registered population, the proportion of tertiary industry, economic density, and per capita net income of rural farmers account for a large load in component 1 of this principal component analysis, and component 1 mainly reflects these variables. In component 2, the proportion of industry in GDP, per capita GDP, and urbanization rate occupy a large load, and component 2 mainly reflects the above variables.

Calculate the factors of two principal components, and the calculation formula is total score = variance contribution rate of factor 1 * score of factor 1+variance contribution rate of factor 2 * score of factor 2. The comprehensive score is shown in Figure 6.

It can be seen from Figure 6 that Chengdu has the strongest comprehensive strength among the seven major cities, which accords with the reality. Because of the factor analysis of the evaluation data, the negative principal component indicates that it is lower than the average value, so some cities are negative in the comprehensive score. However, this analysis is a numerical evaluation of the city, and the following will use these values to calculate the gravity model, so this paper will add 1 to all the comprehensive scores to make them positive, but the ranking and significance they express will not change.

Bring the comprehensive strength score of the city, the scale of urban nonagricultural population, and the transportation distance into the gravity model formula, and then get the urban economic gravity intensity in the first time period and the urban economic gravity intensity in the second time period of Chengdu Plain Economic Zone, as shown in Figure 7.

As can be seen from Figure 7, the gravitational intensity of Chengdu and Deyang in the first time period is 0.0499, which is the highest among the other six cities. The second is Meishan City, with a gravitational intensity of 0.0325, followed by Mianyang City, Ziyang City, Leshan City, and Ya 'an City. The gravity intensity reflects the comprehensive economic strength of six cities in the first period, the relationship between the nonagricultural population, and the traffic distance between Chengdu and Chengdu.

This factor accounts for a large proportion in the calculation of gravity intensity. Meishan city's comprehensive strength is not ranked high, but it should make use of its location advantages in the future economic development through good economic radiation and have more economic exchanges and interactions with central cities, so its economic development potential is relatively large.

After ten years, the gravity intensity of Ya 'an City still ranks at the bottom. Because of the long traffic distance with Chengdu, the economic gravity with Chengdu is hindered by the distance, and it is difficult to form good economic, information, policy and resource relations, and cooperation with Chengdu.

In order to verify the effectiveness of the development trend prediction model of Chengdu Plain Economic Zone analyzed in this paper, relevant experiments should be carried out. The experimental sample data of this paper come from the regional economic GDP data of Chengdu in 2016–2020. The prediction results of GDP of this region and the comparison results between the predicted value and the actual value are described in Figure 8. In this paper, Matlab simulation software is used to complete related experiments.

From the analysis of Figure 8, it is clear that the economic growth forecasts of the region's economy in the last five years are well fitted. The GDP value predicted by this model is in high agreement with the actual value. The method in this paper can achieve satisfactory prediction accuracy for regional economy, which shows that the model designed in this paper is feasible.
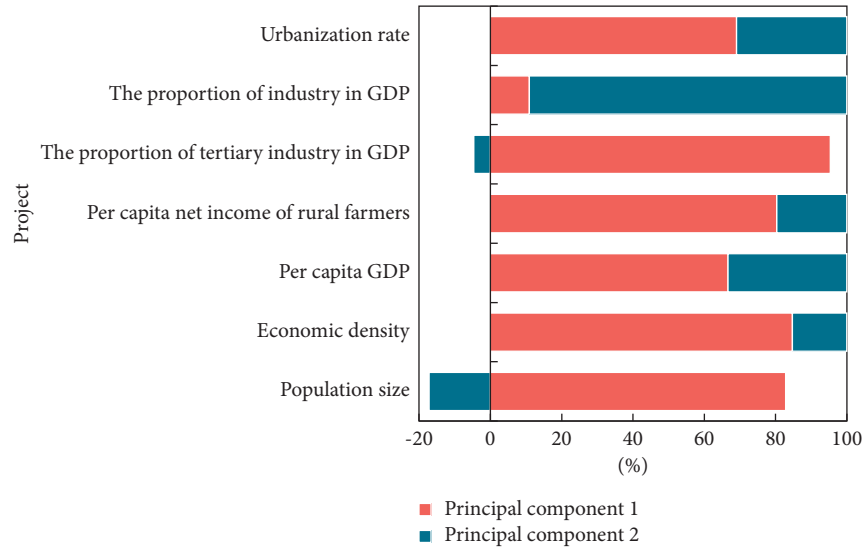
FIGURE 5: Rotation component matrix of gravity intensity in Chengdu Plain Economic Zone from 2010 to 2020.
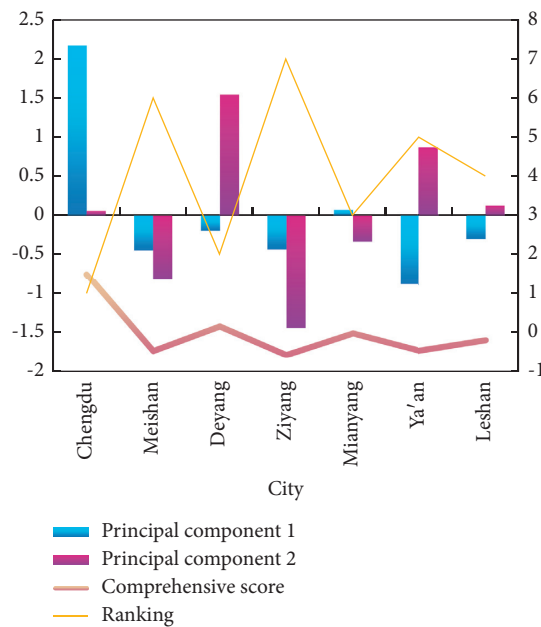

FIGURE 6: City score of Chengdu Plain Economic Zone based on factor analysis.

In order to further verify the superiority of this model, the literature [20] model, literature [24] model, and this model are used to forecast the economic development potential of the experimental region, and the detailed results are described in Figure 9.

Comprehensive analysis of Figures 8 and 9 shows that the prediction effect of this model is better than that of literature [20] and literature [24], and the predicted value of GDP in the experimental area by this model is the closest to the actual value. The main reason is that literature [20] can

only predict the linear change trend of regional economy. With the development of regional economy, there are many nonlinear change factors. At this time, literature [20] model can not effectively analyze the nonlinear regional influence factors and obtain accurate prediction results.

Although literature [24] can deal with the nonlinear trend of regional economy, it cannot filter out the noise interference factors, and the obtained prediction results have some deviations. In this model, MLR is used to obtain the original forecast data, which solves the nonlinearity among
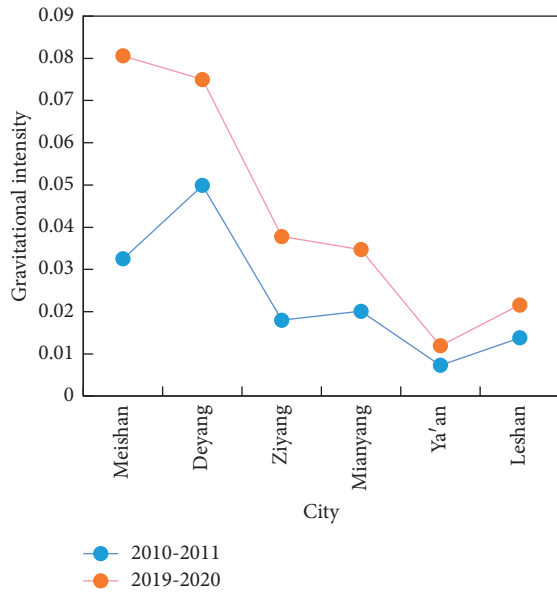
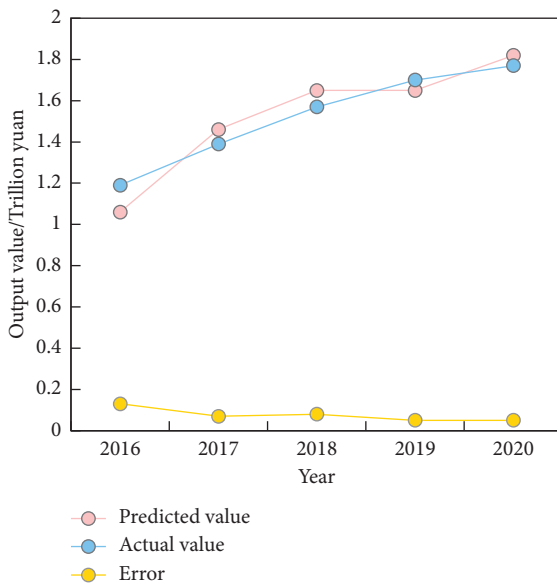FIGURE 7: Gravity intensity of six cities in Chengdu Plain Economic Zone to Chengdu.

FIGURE 8: The results predicted by this model.

the influencing indexes. Then, the GCD method is used to classify the original forecast data, and the economic forecast model is built based on the attribute rules of element forecast data, and finally the forecast data with high accuracy are obtained. Therefore, this model has strong forecast performance and is an effective forecast model for the development trend of Chengdu Plain Economic Zone.

Benefit sharing is the fundamental driving force for coordinated development, and a reasonable benefit sharing mechanism is an important prerequisite for realizing coordinated development in Chengdu Plain Economic Zone. In the economic zone, make overall arrangements for industrial development projects introduced by cities,
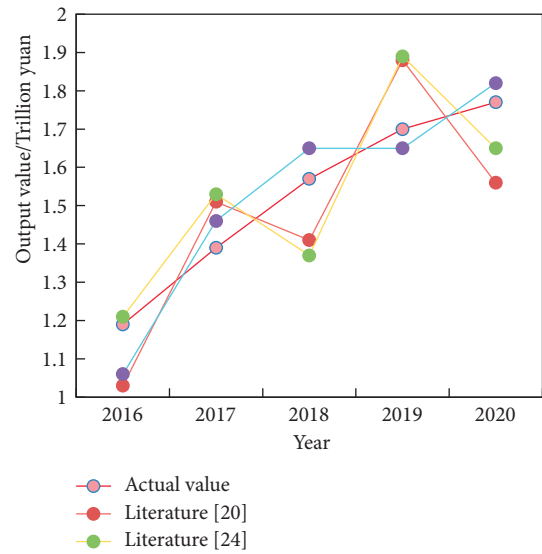

FIGURE 9: Prediction effect of different prediction models.

accelerate industrial cooperation projects introduced by cities to other areas in the economic zone, and enhance the overall advantages of the economic zone in undertaking industrial transfer. Establish a horizontal ecological compensation mechanism, including the establishment of a carbon emission trading market, so that the contribution of the upstream region for ecological security can be compensated by the downstream region. Increase financial transfer payments to restricted and prohibited development areas, support these areas to improve the ecological environment and speed up ecological restoration, guide these areas to focus on environmental protection and ecological security, and effectively safeguard the ecological environment security of economic zones.

5. Conclusion

The regional economic circle formed with the regional central city as the core has become the most active carrier of global economy, promoting countries' participation in global competition and inter-regional division of labor. The above model calculation results fully show that the proportion of the output value of the primary industry, the output value of the tertiary industry, and the fiscal expenditure to GDP has a great influence on the per capita GDP of Chengdu Plain Economic Zone and then has a great influence on the total economic growth of Chengdu Plain Economic Zone. Chengdu has a strong economic attraction to Mianyang, Deyang, and Leshan, but its economic attraction to Ya 'an-Ziyang east-west development axis is relatively weak. In addition, the intensity of economic radiation increased obviously in the past decade, and the difference of economic gravity intensity gradually increased. Compared with other prediction modules, the MLR-GCD prediction model proposed in this paper has higher accuracy of regional economic prediction and can quickly and accurately predict the development potential trend of Chengdu

Plain Economic Zone, with small error and important application value.

Data Availability

The data used to support the findings of this study are included in the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

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