

Retraction

Retracted: An Empirical Study on the Employment Monitoring and Early Warning Mechanism of Medical Graduates in Universities with Big Data and Complex Computing System

Discrete Dynamics in Nature and Society

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Manipulated or compromised peer review

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] H. Wu and S.-B. Tsai, "An Empirical Study on the Employment Monitoring and Early Warning Mechanism of Medical Graduates in Universities with Big Data and Complex Computing System," *Discrete Dynamics in Nature and Society*, vol. 2021, Article ID 6846236, 10 pages, 2021.

Research Article

An Empirical Study on the Employment Monitoring and Early Warning Mechanism of Medical Graduates in Universities with Big Data and Complex Computing System

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Based on the management of big data, the analysis and forecast of the employment demand cycle business situation studied in this article is based on the employment cycle theory and a complete set of employment monitoring, employment evaluation, employment forecasting, and policy selection theories and strategies developed around the employment cycle fluctuations, a specific employment phenomenon. First, systematically evaluate the current state of the employment demand boom, appropriately reflect the hot and cold degree of the employment demand boom, and provide necessary information for the government's regulatory measures, content, and timing. Secondly, it reflects the regulatory effects of graduate employment monitoring, judging whether graduate employment monitoring measures are properly applied, whether they have the effect of smoothing out employment fluctuations, and promoting the country's employment demand; in addition, business decision makers can take advantage of the employment demand boom, by monitoring the information provided by the early warning system and timely foreseeing the upcoming macrocontrol measures, so that enterprises' labor adjustments can adapt to the government's regulatory measures. At the same time, the model proposes a prosperity index method for monitoring and early warning of the employment demand cycle. After selecting and dividing three types of prosperity indicators, the DI index reflecting the trend of the prosperity change and the CI index reflecting the strength of the prosperity change are calculated and constructed. The national employment demand boom monitoring and early warning signal system predicts the trend of the employment boom cycle outside the sample period. The experimental results show that the cyclic prosperity forecast results are consistent not only with the national employment demand prosperity in recent months, but also with the use of the structural measurement ARIMA (p, d, q) model. The alertness value is close, indicating that this indicator system has a good effect on the national employment demand boom monitoring and early warning.

1. Introduction

With the rapid development of the country's economy and culture, competition in all walks of life is becoming increasingly fierce. As a training base for social talents, how to enable graduates and employers to quickly find the resources they need has become a job guidance for college graduates [1]. Colleges and universities have not effectively adjusted the education system, professional structure, and outstanding ability training. Therefore, the planned and supply-

oriented education system directly hinders the employment of college students. Of course, the "procedural" guidance model that does not pay attention to the supply and demand situation and the psychological research of students' personality is also not conducive to helping college students find employment [2]. In addition, the personal factors of college students, such as employment concepts and high income expectations, all have a greater impact on their employment. Therefore, the government regulates the operation of universities based on the employment rate indicators for college

students. However, because the universities themselves do not have the ability to expand employment space, and at the same time they lack an effective mechanism to adjust the talent training model according to the industrial structure, this kind of employment rate is used to promote college students [3–5].

With the intensified structural adjustment, employment pressure is huge, and the promotion of employment has always been a major issue facing the reform and development process. It is inevitable to study the establishment of a national employment demand boom monitoring and early warning system, because it can correctly evaluate the current state of employment demand boom operation, properly reflect the degree of hot and cold employment demand boom, and provide government control measures, content, and timing of introduction. It also reflects the regulatory effect of graduate employment monitoring, judging whether graduate employment monitoring measures are properly applied, and promoting the country's employment needs. With the development of the past 100 years, the analysis methods of employment prosperity have become more and more mature. So far, the fact that more than 80 countries and regions have carried out economic analysis in the world illustrates the role and value of economic analysis [6–9]. After more than ten years of research, the country now has various prosperity indexes that can more comprehensively reflect the country's employment fluctuations. However, the relevant subindicator system and the employment demand prosperity index have not yet been established. The purpose of this article is to compile the country's employment. The demand climate index is to study this problem in order to find a better method to achieve the best results and ultimately have timeliness, accuracy, and better forecasting functions [10].

This article elaborates on the whole process of system development, including requirements analysis, system design, and implementation. Some key methods and steps in system analysis are researched and discussed, and related technologies used in development and use are briefly described. In the process of system design, this article summarizes the experience and problems in the work, draws on the mature experience of employment information management systems at home and abroad, and combines the characteristics of the employment management cadre college to design the functional structure of the entire system and sort out the system for the overall operation process. According to user types, the system functions are divided into four modules: background management module, student information module, employer module, and information release module. Based on the combination of theoretical analysis and practice, the design ideas of the overall structure of the employment demand boom monitoring and early warning system are discussed. It clarifies the screening methods of the leading, explains the construction guidelines of the employment demand boom monitoring and early warning indicator system, and discusses the compilation method of the employment demand boom's diffusion index and composite index. On this basis, a monitoring and early warning system for the boom cycle of

employment demand has been established, and the warning limit of the boom index of employment demand has been determined.

2. Related Work

Whether the monitoring of employment situation and employment forecast is timely and whether the judgment is accurate are of great significance to the timeliness and effectiveness of the formulation of employment monitoring policies for graduates. Many cyclic boom monitoring and early warning systems have not yet established employment demand boom monitoring and early warning systems. With the development of the prosperity theory, the country has many influential prosperity indices, such as the Castel Employment Prosperity Index and the Castel Business Prosperity Index released by the Castel Employment Evaluation Center and the National Economic Index and the National Economic Index released by the National Bureau of Statistics with housing climate index, business climate index, entrepreneur confidence index, and consumer confidence index [11–13].

Bach [14] selected 21 representative indicators from a time series of nearly a thousand statistical indicators to form a new monitoring system. This system is composed of three indicators: advance, synchronization, and lag. It takes the objective comprehensive state of employment as the measurement object and adopts a multi-index information integration method—diffusion index (DI). Since then, the system has been revised several times to ensure effective operation. The diffusion index method has been fully affirmed from theory to practice and has since become one of the basic methods for constructing an employment boom monitoring and early warning system. Since then, the development of the prosperity monitoring system has entered a new stage. Perakakis et al. [15] conducted in-depth research on market decision theory and found that, in market employment, the market will automatically configure the supply of labor to achieve full employment. In this way, the job market will not be a problem. Favaretto et al. [16] inherited Schultz's human capital theory and believed that individuals' own wealth, personal abilities, and their own lifespan will promote the development of peace and employment, thereby affecting the employment situation, and further on the basis of the Lewis dual employment model, the transfer of rural labor was researched to solve employment-related problems. Marinakis et al. [17] discussed the theoretical feasibility of using prosperity indicators to monitor graduate employment monitoring, and their research laid the foundation for later attempts to construct a leading prosperity index. Subsequently, the development of the employment system became more and more complicated, and the forms of employment fluctuations in various fields in the employment system were also various. Traditionally, the practice of simply using a prosperity index to describe the fluctuations of employment has fallen far behind the needs of employment development in the new era, which has produced a more detailed way of using the prosperity index.

Aceto et al. [18] use the prosperity index to analyze and predict the cyclical fluctuations of employment. This article mainly discusses how to determine the employment boom cycle (period); how to find enough statistical indicators that are important to the formation or reaction of this cycle, that is, the prosperity index; and how to integrate it to reflect the cycle of prosperity changes and how to analyze and predict the cyclical fluctuations of employment on this basis. Among the 35 monthly economic indicators, 13 leading indicators, 13 consistent indicators, and 9 lagging indicators were selected, and the trajectories of the three groups of indicators were measured using the diffusion index method, and the benchmark cycles of the three groups of indicators were found. In the same year, they designed six sets of comprehensive monitoring and early warning indexes and divided the operating range of the indexes into five light zones to show the hot and cold conditions during the cycle of employment. Some scholars believe that the basic idea of the diffusion index (DI) is to regard the trend of maintaining the rising (or falling) index as a process of business fluctuations and penetration and to grasp the business situation by integrating them [19–21]. They also believe that the synthetic index is the same as the diffusion index. It also selects the index that has a greater impact on the prosperity index among the important employment indicators of employment activities and synthesizes the rate of change of each index, so as to grasp the size of the economic change.

3. Construction of a Monitoring and Early Warning Model for the Employment of Medical Graduates in Colleges and Universities Based on Big Data Management

3.1. Big Data Management Level Distribution. The three-tier application of the big data management model divides the design of the entire application system into three levels: presentation layer (UI), business logic layer (BLL), and data access layer (DAL). Figure 1 is the hierarchical topology of big data management. Layering is a way to realize the idea of “high cohesion, low coupling.” As long as the original function is expanded on the orthonormal basis function, the Euclidean distance between the original functions and the Euclidean distance between the basis expansion coefficient vectors are consistent. The factor set refers to the set of evaluation factors in the comprehensive evaluation. That is, the criterion-level factor set is composed of criterion-level factors determined by the target level, and the operation-level factor set is a collection of operation-level factors corresponding to each factor of the criterion level. See Figure 1.

The DIV element is an element used to provide structure and background to the block-level content in an HTML document. All the content between the start tag and the end tag of the DIV is used to form this block, and the characteristics of the contained elements are controlled by the attributes of the DIV tag or by formatting this block with a style sheet.

$$P = e^{-2\pi T^2} = e^{-2G},$$

$$P(n) = \frac{(\lambda \times t)^{n+1} \times e^{\lambda t}}{n!}. \quad (1)$$

The B/S architecture and the English abbreviation of browser/server, as well as the browser and server architecture, are a new type of Web-based system architecture model. Browser is both a Web browser and the user side of the system. The user accesses various interfaces provided by the system server through the browser to realize the functions of the system, while the main logic of the system is realized by the server side.

$$P\{X = m\} = A_N^m \times \left(\frac{2}{L+d}\right)^m \left(1 - \frac{2}{L+d}\right)^{N-m},$$

$$f(x_1, x_2, x_3) = G(F(x_1); W)G(F(x_2); W)G(F(x_3); W). \quad (2)$$

The process of comprehensive evaluation of big data can be understood as a transformation process of a big data converter, that is, a big data transformation process from the factor set U to the comment set V . When the weight vector A of a set of factors is input, a set of corresponding evaluation results B can be obtained. The comment level can be used to evaluate the big data concept of each factor. It is the 11 kinds of decisions that describe the state of each factor.

$$L(y, g) = \sum_{i=1}^n y_i \times \left(g_i + \ln \sum_{j=1}^n \exp(g_j) \right). \quad (3)$$

Determining the set of reviews will enable the comprehensive evaluation of big data to obtain a big data evaluation vector. The number of rows in the R matrix is determined by the number of indicators, and the number of columns in the R matrix is determined by the number of evaluation levels. Each row in R describes the degree of membership of a certain evaluated item to each level of big data subset according to different single factors. Using the big data weight vector A to synthesize different rows, we can get the degree of subordination of the object to each level of big data in general, that is, the big data comprehensive evaluation result vector.

3.2. Analysis of the Needs of Graduates. The cyclical fluctuations in employment are accompanied by cyclical fluctuations in a series of employments and employment indicators, and the pace of fluctuations in different employment indicators is not consistent. The business cycle analysis method is based on statistical indicators, screening out representative indicators, establishing a cycle business early warning indicator system, and establishing various indexes and models to describe the business situation and predict future trends. Similarly, the business cycle analysis method can be used to analyze the employment situation and predict its trend. The time difference between employment and national employment-related variables is used

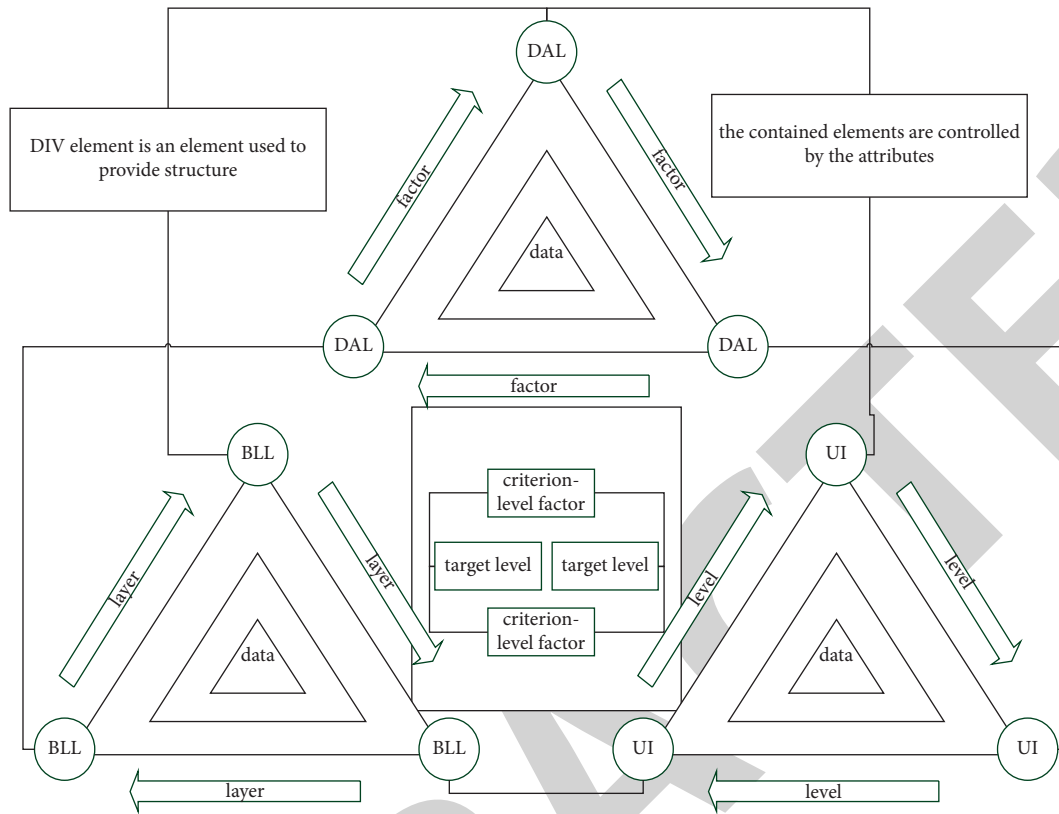


FIGURE 1: Big data management hierarchy topology.

to indicate the trend of the situation. The first is to determine the frame of reference for the time difference relationship, that is, the benchmark cycle, and to compile a monthly table of the prosperity cycle; the second is to choose the leading, synchronous, and lagging indicators according to the benchmark cycle; then can the diffusion index and composite index be compiled to describe the employment situation and predict the future prosperity. However, like the prototype method, the object-oriented design method requires a certain amount of software foundation support before it can be applied. In addition, in large-scale MIS development, if it is not divided from the top to the whole, but from the beginning, the object-oriented design is used from the bottom up. Therefore, object-oriented design methods and structured methods are still two interdependent and irreplaceable methods in the field of system development.

Figure 2 is a histogram of the big data cycle boom early warning indicators. The prosperous indicator system is further set up as an early warning indicator system, which reflects the basic characteristics of the employment cycle and serves for the judgment of the employment monitoring situation of graduates and the monitoring and control of the employment of graduates. The basic content design of the employment cycle early warning indicator system is as follows: the early warning indicator system is composed of sensitive indicators, and each indicator reflects a specific sensitivity aspect of the employment cycle. Therefore, when combined, it can represent the overall cyclical changes in

national employment activities to provide a basis for the judgment and expectation analysis of the employment monitoring situation of graduates. Classification is mainly used in application classification and trend prediction. We find out the common characteristics of many data and classify them. According to different classification models, each data can be mapped to a category among many data. The early warning indicators are selected based on the employment process indicators based on the selection principles and methods of sensitive indicators. The early warning indicator system is divided into three groups of setting systems: advance, synchronization, and lag based on the relationship between each indicator in terms of time and the benchmark employment cycle. They describe the characteristics of advance employment, synchronized employment, and lagging employment of the employment cycle, respectively. In the analysis and judgment of the employment monitoring situation and operation of graduates, it is often based on each group of indicators to calculate the leading, synchronous, and lagging comprehensive indicators and diffusion indicators for analysis.

3.3. Component Factors of Employment Monitoring. Early warning monitoring analysis is a systematic analysis method that deals with employment, management, and technical issues with complex factors. It decomposes complex issues into multiple components and further decomposes these factors in accordance with the dominant relationship,

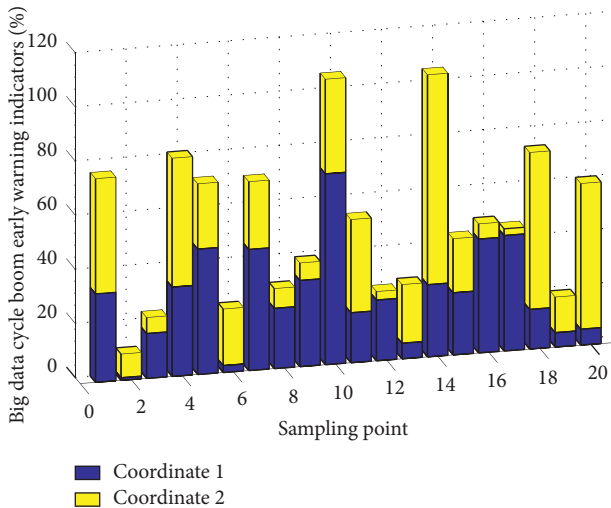


FIGURE 2: Histogram of big data cycle boom early warning indicators.

according to the target level and the criterion level. The operation levels are arranged to form a multiobjective, multilevel, and orderly hierarchical structure. The importance of each index in the level relative to the overall goal is determined by pairwise comparison, and then comprehensive evaluation determines the relative index of each index. The Career Guidance Center can use the system to add basic student information, manage various information and data of graduates, and provide relevant career guidance consultations and upload various forms and documents for students to download. Graduates of this school can use their personal information to register through the system, post their resumes online, and apply for positions they are interested in. In order to make the survey results more scientific and reasonable and avoid different opinions among experts, the median of the judgments given by the experts is taken as the value of each element in the judgment matrix, because the median is a data value in the middle of a column of data to represent the concentrated opinions of experts to construct a judgment matrix. See Figure 3.

Figure 3 shows the composition of employment monitoring levels. Through the analysis of the time difference in the prosperity index, it is also possible to predict the trend of future employment fluctuations. The recovery, expansion, contraction, and depression of employment fluctuations did not occur in a single month but gradually unfolded through the continuous evolution of many employment variables in different employment processes. Therefore, the prosperity index for determining the employment cycle statistics is divided into the diffusion index (DI) and the composite index (CI). It uses mathematical functions to clearly express the relationship between data and determine the relationship between data attributes. In addition, the construction of the advanced indicator system is to select some indicators that have not changed in the overall growth or decline of employment demand, in order to predict the turning point of the employment boom, estimate the magnitude of the rise and fall of employment demand, and speculate on the trend

and direction of the employment boom. This method uses the algorithm to calculate the peaks and valleys of the two time series and then compares the corresponding relations between the peaks and valleys of the two series to judge the advancement, synchronization, and hysteresis of the series. Generally for at least 15 months, the basic idea is to smooth the original series appropriately, guess the time when the inflection point appears on the smooth curve, and then gradually approach the appearance time of the peaks and valleys of the original series.

3.4. Weight Update of Early Warning Mechanism. When the economy reached a mature stage, several indicators began to change directions, and more indicators turned down. When the rising indicators and the falling indicators are equal, it is the turning point for the economy to expand from expansion to contraction. After that, the declining indicators gradually gained the upper hand, employment entered a depression, and most indicators maintained a downward trend in contraction. Later, the outlook for the economy became clear again, several indicators turned to rise again, and the economy never recovered. Therefore, the basic idea of the diffusion index (DI) is to regard the upward (or declining) index to prevail, as a process of economy spreading and permeating, and to integrate them to grasp the overall economy. That is, the number of indicators of sensitivity that is rising is assigned a value of 1, the number that is flat is assigned a value of 0.5, and the number of declining indicators is assigned a value of 0.

Figure 4 is the diffusion index curve of employment warning. When an indicator deviates from the mean at a certain point or period of time by more than its threshold, it means that the indicator has sent a crisis signal. If there are more signals, it means that the society is more likely to have a crisis in the next 24 months. If a signal is issued and there is a crisis in the next 24 months, the signal can be considered as a good signal; otherwise it can be considered as a bad signal. Finally, the number of bad signals that actually appeared is divided by the actual number of bad signals. A good number of signals can get an interference-to-signal ratio. There are four ways to synthesize the indicators: the first is to use simple summation; the second is to divide the signal into weak and strong, multiplying by 2 for strong signals and multiplying by 1 for weak signals; the third is the accumulation of signals over a period of time; the fourth is weighted average, and the weight is the reciprocal of the interference-to-signal ratio. In general, in terms of forecast accuracy, comprehensive indicators perform better than single indicators. See Figure 4.

4. Application and Analysis of Employment Monitoring and Early Warning Model for Medical Graduates in Colleges and Universities Based on Big Data Management

4.1. Feature Extraction of Employment Big Data. This system is developed using Microsoft.Net + SqlServer database technology. The powerful functions of Asp.Net and the

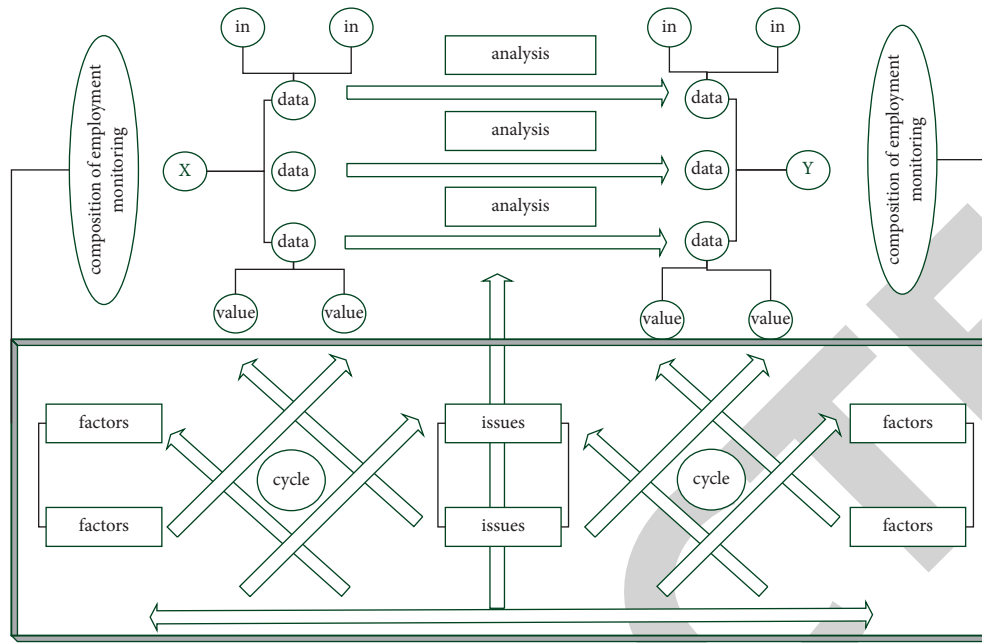


FIGURE 3: Hierarchical composition of employment monitoring.

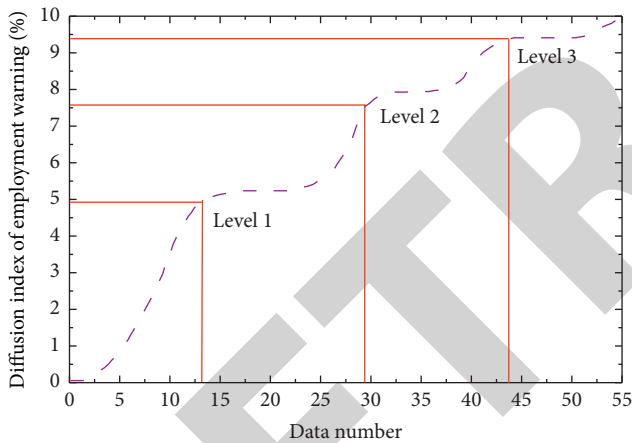


FIGURE 4: Diffusion index curve of employment warning.

stable data guarantee of SqlServer are the basis for the realization of the system. This system is based on Internet and only needs to build a server to provide Web and database services to achieve system functions. Therefore, there is no problem with the development of this system technically. Regression analysis is mainly used to study the prediction and correlation of data series. It characterizes the characteristics of data attributes. Mainly with fresh graduates of this school and some previous graduates, only students of this school can become registered student users of this system. Therefore, we need to import the basic information of graduates into the system before registering. The imported information includes the student's name, student ID, and ID number. After logging in to the website, students need to enter relevant information before registering. Because of the authentication of user information, it is possible to prevent nonschool students from becoming registered users of the

system. Due to the limited amount of training and test data, a 3-fold cross-validation method is used to test the prediction effect. The basic idea of the cross-validation method is as follows: for n data points, assume that each measured data point has not been determined in turn, and use the ordinary kriging to estimate this based on the selected semivariance model based on the data of $n-1$ other measurement points, the value of the point.

Figure 5 shows the distribution of employment early warning big data forecasting effects. The network structure of the entire model is divided into four layers: input layer, hidden layer one, hidden layer two, and output layer. The second hidden layer is also the competitive layer of the SOM network. Since the topological structure of the competitive layer is ignored in the secondary training, the second hidden layer is a linear layer. The input layer neuron is N , which represents the input space dimension or the training sample dimension, the neuron of the hidden layer one is M , and the neuron of the hidden layer two is M . The output layer neuron is K , which represents the K categories that have been designated before the network training. Using the result of single ordering of all levels in the same level, the importance weight value of all elements of this level can be calculated for the previous level, which is called the total order of levels. If you expand on a nonorthogonal basis function, you only need to modify the distance between the coefficient vectors, and you can still get a consistent conclusion. The total ordering of the levels needs to be carried out in order from top to bottom layer by layer. For the highest level, its level single order is its total order. The volatility curve of the composite index and the volatility curve of the diffusion index have the following relationship. The 50% intersection of the benchmark indicator's diffusion index line and the peak transition of the selected indicator curve are drawn on the benchmark synchronization line to

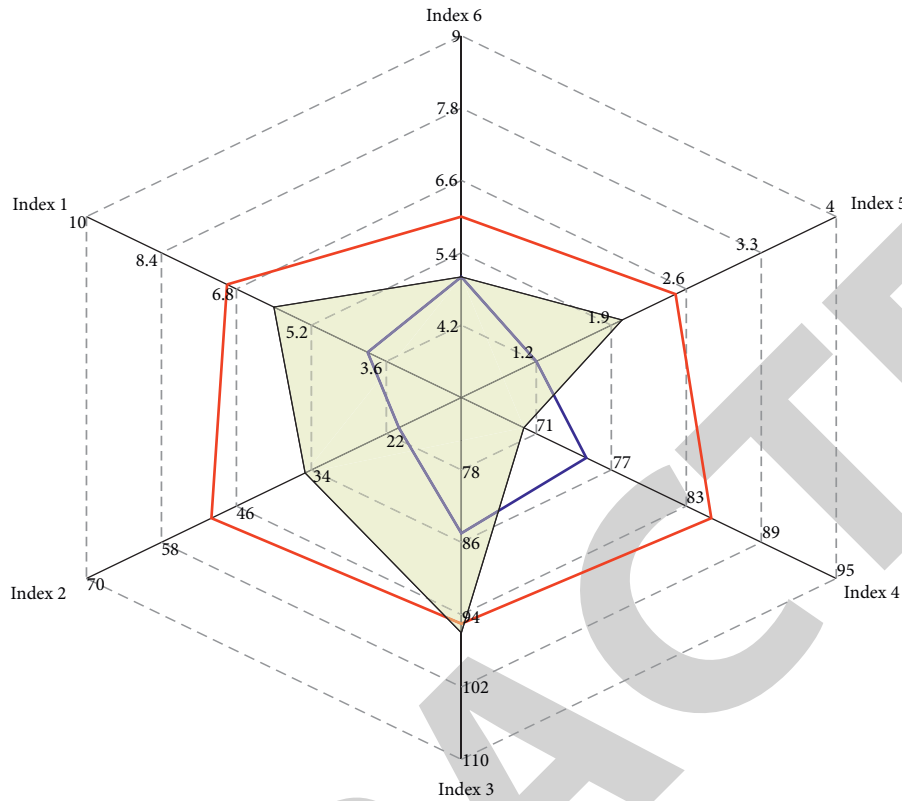


FIGURE 5: Distribution of employment early warning big data forecasting effects.

compare the peak of the candidate indicator curve with the 50% intersection of the benchmark indicator's diffusion index line. CR is the random consistency ratio of the total ranking of the hierarchy. Similarly, when $CR < 0.10$, the calculation result of the total ranking of levels is considered to have satisfactory consistency; otherwise, it is necessary to adjust the judgment matrices of this level, so that the total ranking of the levels is satisfactory. See Figure 5.

4.2. Graduate Employment Monitoring and Early Warning Simulation. The model shows the hierarchical analysis model of the social risk derived from unemployment of university graduates. We take the social risk index derived from unemployment of university graduates as the overall target and use structural incentive index, structural deprivation index, common belief index, sudden factor index, and effective mobilization. The six angles of index and social control index are used as the criterion layer, and the specific measurement dimensions describing the six angles are used as the operation layer, thus constructing the analytic hierarchy model. The overall operation process of this system is as follows: users open different pages according to different needs. If the administrator user needs to manage the system information of the website, directly open the login page of the system background management and enter the administrator user name and password to log in to the system; after the system determines that the input is correct, the administrator can open the background management navigation page and select its needs. After the administrator

operation is completed, you can log out of the system directly. Other users (visitors, student users, and enterprise users) can directly open the homepage of the website, and visitors (or system users only need to browse the information on the Web page) can query information based on the navigation on the homepage. Registered users can enter the user name and password in the user login section of the homepage. After the system judges that the input is correct, the user type is judged according to the user ID and then enters the student user interface or enterprise user interface. Figure 6 shows the distribution of graduate employment information queries. See Figure 6.

This article uses Intel P4 3.06 G CPU, 512M memory, and Windows XP operating system as the test platform, and the algorithm uses Weka's filter to implement the TTSM algorithm and the normalization of input data. According to the sequence of time series data mining algorithm steps based on the time series trend pattern sequence, the trend prediction for the fourth quarter is as follows. At the same time, the established judgment matrix is sorted by level single and total level, the maximum eigenvalue and eigenvector of the judgment matrix are calculated, and consistency is checked. Due to the cumbersome calculation process, this paper uses YAAHP software for calculation and consistency check and obtains the maximum characteristic root and consistency ratio of each judgment matrix, respectively. It is usually necessary to centralize a large number of extremely different data to provide convenience for subsequent data processing. The key to data integration is actually to solve the data differences caused by different

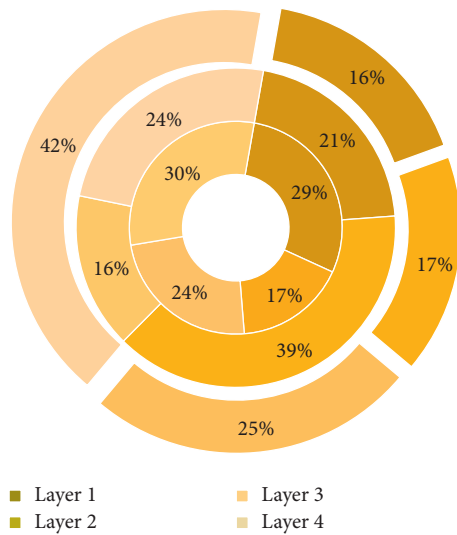


FIGURE 6: Distribution of graduate employment information inquiry.

conditions such as types and platforms. The evaluation results show that there is a 35.56% probability that the university graduates' unemployment-derived social risks are in a light alert state, a 34.23% probability is in a medium alert state, and a 17.27% probability is in a nonalert state. 9. There is a 69% possibility of being in a serious alarm state, and a 3.25% possibility of being in a very safe state. According to the principle of maximum degree of subordination, it can be judged that the social risks derived from unemployment of university graduates are in a light alarm state. This paper designs detailed test cases for system functions and conducts system function tests based on the test cases. According to the final test results, it shows that the functions of a graduate employment management system of a college meet the expected goals of the system design, and it can also provide information on user errors.

4.3. Example Application and Analysis. The experiment uses SQL SERVER 2000 relational database as the database server, which has fast execution speed and powerful functions, and uses ADO.NET provided by VS.NET as the database access interface, which is quick and easy to access. A unified development kit is used, so that the system does not have to consider the interface with the operating system. Position management is a dedicated module for employers and counselor users. The employer can manage all position information of the unit, including adding, deleting, modifying, and querying the position information of the unit. Counselor users can control all positions within the system. Information management includes adding, deleting, modifying, and querying position information within the system. This paper mainly uses the time difference correlation analysis method to screen and reclassify the employment prosperity monitoring indicators and classify them into the leading indicators of employment prosperity, the synchronization indicators of employment prosperity, and the lagging indicators of employment prosperity. The principle

of the time difference correlation analysis method is as follows: first select an employment index that is quite sensitive to the fluctuations in the current employment boom as the benchmark index, then calculate the correlation coefficient of the tested index several periods ahead or later, and calculate the correlation coefficient in several periods. Among them, the time lead or time lag of the period with the largest correlation coefficient is the lead or lag period of the verified indicator. Figure 7 shows the correlation coefficient curve of employment early warning indicators. See Figure 7.

This paper collects employment prosperity index data and employment monitoring index data in large- and medium-sized cities. Based on these indicators, according to the method of determining the level of unemployment warning risk in large and medium cities, a risk warning index (RI1) including the town's employment status and labor employment risk is developed for early warning index (RI2) and employment policy risk early warning index (RI3) three-dimensional radar chart. Real-time grasp of the overall dynamic changes in the operation of equipment, in the life cycle of each equipment, greatly improves the level of operational safety and efficiency. Among them, the employment monitoring index CI1 for large and medium cities, the labor employment monitoring index for large and medium cities CI2, and the employment policy monitoring index for large and medium cities CI3 are, respectively, composed of the employment growth monitoring index for large and medium cities, the labor employment monitoring index for large and medium cities, and the employment monitoring index for large and medium cities. The risk location map includes 3 areas, each of which represents a certain dimension of risk. In actual operation, according to the risk index value under each dimension, it is marked in the corresponding area. This can form a net-like radar location map. The closer the index value is to the minimum value -0.4 , the more serious the alarm is, and the index value greater than 0 means no alarm. See Figure 8.

In order to ensure the reliability, completeness, and fault tolerance of the system to the greatest extent, the paper adopts means to simulate actual users for related tests. The test method is based on the black-box test idea. Testers only need to pay attention to the input and output results of test cases, not the input and output results of test cases. During the program running process, it is only necessary to check the test output, that is, whether the system running result meets the test expectations. If the test result does not match the expected result, infer the cause of the error based on the test result and correct it in time. First, the employment prosperity index is processed in the same direction. Figure 8 is a comparison of quantitative indicators of employment early warning. Quantitative indicators are divided into positive indicators, reverse indicators, and moderately optimal indicators. If there is a strong correlation between the two indicators, usually only one is retained. By calculating the correlation of the indicators, it is found that the correlation coefficient between the business climate index and the entrepreneur confidence index is as high as 0.983, so the business climate index (B1) is deleted, B7 and B9, B11, B9, and B10, B11, B10, and B11 are highly significant. For

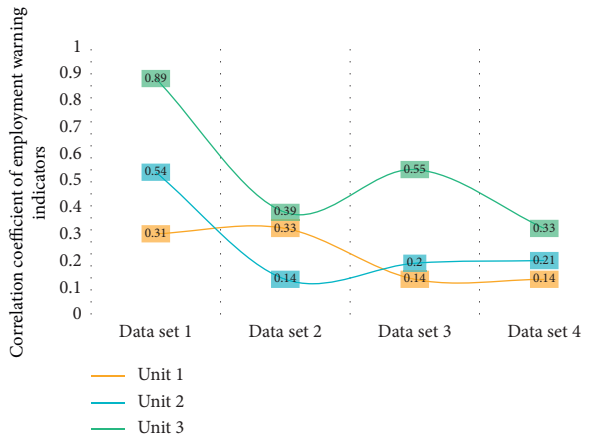


FIGURE 7: Correlation coefficient curve of employment early warning indicators.

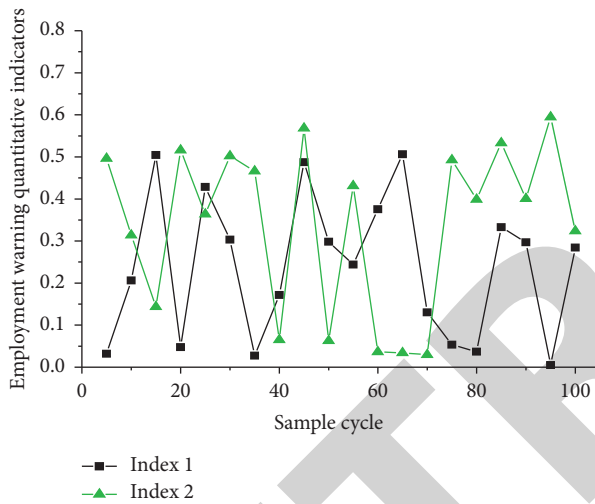


FIGURE 8: Comparison of quantitative indicators of employment early warning.

relevance, B9 and B11 are deleted, and B10 is retained. Therefore, the index system selected in this article finally includes 15 indexes. But at the same time, we can see that the proportion of being under the police status is relatively high, indicating that the social risks that may be caused by unemployed college students are gradually increasing. Government departments should pay attention to it and increase the degree of protection and rescue for unemployed college students to maintain the harmonious and stable development of the society.

5. Conclusion

Based on the theory of big data management, this paper constructs an early warning indicator system for college graduates' unemployment-derived social risks and uses the analytic hierarchy process to determine the weight of each indicator and finally uses the big data comprehensive evaluation method to apply the indicator system to determine college graduates. Unemployment-derived social risks

are currently in a state of mild police, but it is more likely to move closer to the police. In the past various information system development processes, the CLIENT/SERVER architecture has been widely used. Its characteristic is that the application logic is usually distributed between the client and the server. The client sends a data resource access request, and the server returns the result to the client. However, the CLIENT/SERVER structure has many architectural problems. For example, when the number of clients increases sharply, the performance of the server will be greatly reduced due to overload; once the application requirements change, both the client and server applications need to be modified, which brings great inconvenience to application maintenance and upgrade. The hierarchical design pattern has many characteristics: developers can only focus on one of the layers in the entire structure; they can easily replace the implementation of the original layer with a new implementation; they can reduce the dependency between layers to the reuse of various layers of logic. At the same time, this article comprehensively uses quantitative employment, statistics, employment cycle fluctuation theory, forecasting and decision-making technology, time series analysis technology and computer technology, and other theories and technologies to establish a monitoring and early warning model for the employment demand boom, from the perspective of employment cycle fluctuations.

Data Availability

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

Conflicts of Interest

The authors declare that no conflicts of interest exist concerning this study.

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