Design and Implementation of Enterprise Human Resource Decision System Based on Data Mining

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Abstract. Human resource management is an important part of the daily work of colleges and universities, which plays a certain role in helping the establishment of high-quality talents and the overall development of colleges and universities. Data mining is a kind of emerging information processing technology, in the use and extraction of information plays a more and more important role, in recent years, people use information technology production and data collection ability to gradually improve, tens of thousands of database should be used for business management, government office, scientific research and engineering development and other aspects, in this situation will continue to develop in the future. This paper discusses the design and implementation of enterprise human resources decision system based on data mining, expounds the current development status of data mining technology, and puts forward its own views, aiming to promote the design and implementation of enterprise human resources decision system in data mining area.

Keywords: Data Mining · Human Resource Management · Decision Support

1 Introduction

Under the background of information technology, most colleges and universities have established human resource management systems and platforms to effectively improve the level of human resource management and thus promote the healthy development of colleges and universities. Nowadays, the market competition of enterprises has gradually shown globalization and high-tech, almost all entrepreneurs realize that the first of all resources in human resources management, is one of the most important competitiveness elements at present. All links of the enterprise business process, such as product design, production, sales, service, etc., are inseparable from the participation of people. Good human resource management has certain help for enterprises to create talent, development environment and improve competitiveness. In a sense, the success factors of enterprise development cannot be separated from the effectiveness of human resources work in enterprises [1].

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2 What is Data Mining

Data mining is a new type of commercial information processing technology. Data mining technology improves people's application of data from low-level online query operation to more advanced applications such as decision support, analysis and prediction. It conducts micro, analysis, synthesis and reasoning on these data to find the correlation, future trends and general general knowledge, which can generally be used to guide high-level business activities [2].

Data mining technology is closely related to the knowledge discovery in the database. Command discovery is a special case of data mining technology, since the data mining system can be in the relationship database, transaction database, data warehouse, space database, text data, and many such as Web data form of mining knowledge, so the essence of the database is just one aspect of data mining. Therefore, data mining is a process of mining useful knowledge from databases, data warehouses and other data storage

Fig. 1. Schematic representation of the data-to-knowledge evolution process.

methods [10]. For data mining, this process of its diversity in the form of source data is more emphasized (Fig. 1).

The meaning of knowledge discovery and data mining is the same. Some people think that discovery is just the difference from data mining. From a broad point of view, data mining is a process from large data sets to hidden knowledge that people do not know in advance and is helpful to decision making [8]. This is an inheritance and development of machine learning methods, and it is a relatively popular data mining research and system development structure. Under this theoretical framework, data mining technology is considered as a process of discovering several knowledge models from the source data [11].

3 The Application of Data Mining Technology in Human Resource Management

The application of data mining technology in enterprise human resource management is mainly divided into five parts, that is, determining objects, preparing data, mining data, analyzing results, and assimilating knowledge. Before data mining, it is necessary to clarify the problems in human resources management in universities, that is, the main purpose of data mining [12]. The results of data mining are often difficult to predict, but the exploration problems are indeed predictive. In terms of data preparation, appropriate data should be selected to collect and sort out the data that need to be solved in human resource management in universities, and select the useful data used for data mining

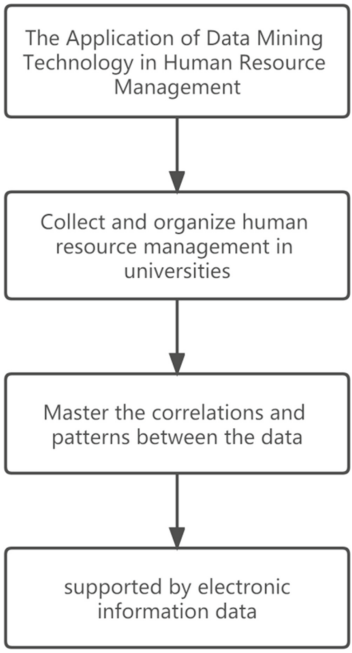

Fig. 2. The Application of Data Mining Technology in Human Resource Management

technology. Data mining is the effective mining of human resource management data after conversion. In the process of mining, besides the processing and mining algorithm, automatic operation is adopted [9] (Fig. 2).

In the human resource management of enterprises, it is of great significance for enterprises to master the talent types, talent composition, talent division and other resources to select talents and establish excellent talent team. Data mining technology selects the data information related to human resource management from a large number of personnel, and grasps the correlation and mode between the data, so as to fully reflect the internal organizational talent composition of the enterprise [8]. It is mainly reflected in the following aspects: data preprocessing, search model, result analysis, and knowledge assimilation.

In terms of brain drain, the problem of brain drain in major enterprises is relatively serious at this stage, and how to prevent the brain drain has become an urgent problem to be solved by major enterprises [5]. Through the comparison and analysis of the data of a large number of departing employees within the human resource management system, the main data are sorted out, and the assumed turnover factors are taken as several important variables and charted, so as to dig out the general reasons for leaving with the employees.

As an important basis of human resource management, performance appraisal plays a vital role in the smooth progress of human resource management. It evaluates the performance appraisal system through data mining technology, which has a great impact on the performance appraisal of enterprises. Establish the corresponding analysis model according to the excavated variables, and the correlation between the variables is effectively analyzed, so as to achieve the purpose of evaluating the performance appraisal and ensure the accuracy of the performance appraisal.

In order to maximize the application value of big data technology, in the process of enterprise human resource management, it is necessary to pay attention to the building of excellent data environment and create a data atmosphere within the enterprise. With big data as the support of shaping corporate culture, strengthen practitioners' cognition of big data, and strengthen the concept of big data virtually. Supported by information management technology, relevant data can be recorded and analyzed. In the era of big data, based on employees' personal information, managers can determine suitable positions and provide an excellent platform for maximizing the value of employees.

Implementation of enterprise human resource management in the era of big data. The corresponding information database can be established, and employee information can be recorded comprehensively and standardized, supported by electronic information data. The retrieval and utilization of employee information in the later stage can be realized through information technology, and the efficiency of enterprise human resource management can be effectively improved. Supported by big data technology, enterprises can promote the construction of blockchain, ensure the security of file information, avoid the lack of employee identity information, and achieve the convenience of human resource management.

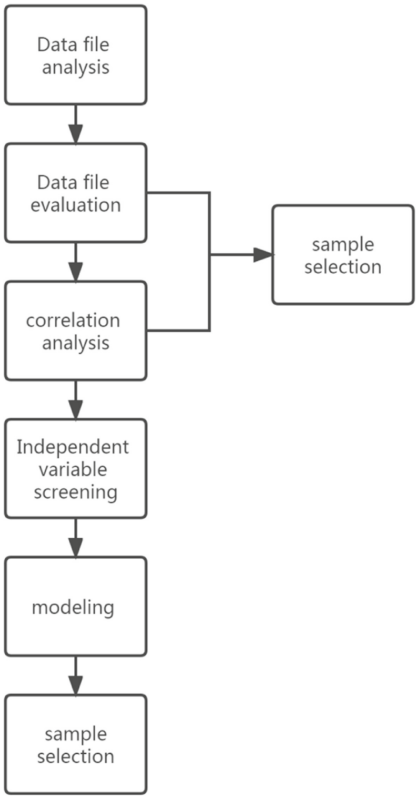

Fig. 3. Data Processing Process.

4 Problems of Data Mining in Human Resource Management

Nowadays, with the rapid development of computer information technology and data mining technology, with the rapid development of human resources, the existing data mining technology still cannot solve the problems in the field of human resource management [3]. At the same time, these problems are unavoidable by human resource managers. However, there are still the following problems in the application of human resource management of data mining (Fig. 3):

4.1 Low Talent Utilization Rate

In today's society, the competitive pressure is increasing, and there are considerable contradictions between job hunting and recruitment [4]. In a large enterprise or institution, it is very important to master the talent composition and type of the system, so as to judge which kind of talent employees belong to, for talent selection and formulate the talent strategy of the unit [7]. In the process of data mining processing, data mining algorithm is the most critical. Use fuzzy data mining algorithm to extract data from the data warehouse, which can be explained according to the following algorithms:

On the whole data record of the data warehouse, establish the classified sample set U, call the object to be classified as samples, such as U1, U2, …, Un, U = {U1, U2, …, Un} as the sample set [11]. In order to achieve reasonable sample classification, the specific attributes are quantified, the quantitative attributes are sample indicators, with M indicators, here the M dimension vector is used to describe the sample, such as formula Ui = (Ui1, Ui2, …, Uim).

Since the data collected in the actual data collection is often not the number of [0,1] closed interval, the original data should be standardized and averaged first. For example, the sample set has n samples, and n data U1K, U2K, … U n K, U1K in the formula for the first sample and k index, their average value can be calculated according to the fixed formula [6].

4.2 Decision-Making is Not Persuasive

The content of human resource management is generally qualitative data, which only accounts for a part, which will lead to human resource managers usually analyze qualitative data, such as personnel recruitment and performance evaluation. Human resource managers only need to make "what is needed", "what aspects of the content include", "results" instructions, do not know why they do so, do not know why the theoretical basis. Even if the reasons are analyzed, it is only described in knowledge and language, without sufficient basis for strong support. This working method of preferring qualitative analysis while ignoring quantitative analysis is generally not convincing, and is relatively limited for the implementation strength [4].

5 Conclusion

On the basis of improving enterprise information management system, information resources has become the important part of enterprise management resources, especially human resource management data for enterprise talent team play a key role, not only to enterprise personnel, scientific research data, with the help of data mining technology, all kinds of information can also be effectively evaluated, provide important foundation for enterprise team establishment and optimization, which has certain help for the long-term development of the enterprise.

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