Human Resource Management Mode Based on Big Data

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Abstract. With the rapid development of Big Data (BD), more and more scholars of human resource management pay attention to its huge business opportunities and information value, so they begin to study and explore the innovation and reform of the company's human resource management mode, in order to break through the difficulties in the traditional human resource management mode. In the process of motivating knowledge-based staff in Colleges and universities, university managers are based on BD platform to provide support for improving the competitiveness of the University, promoting the overall development and long-term progress of the University, and realizing the modernization of management. Based on this background, this paper analyzes the reform of BD into enterprise human resource management mode Sever database as an example, by calculating the efficiency of two kinds of human resource management and investigating the satisfaction of the company's employees, this paper shows the role of two kinds of human resource management modes for enterprises and employees with practical data, reflects the advantages of human resource management mode based on BD platform, and discusses the specific reform and application of BD in human resource management mode.

Key words: Big Data, human resources, management, mode reform

1. Introduction
With the development of the times and society, people pay more and more attention to BD. The huge business opportunities and information value of BD have attracted the attention of human resource management scholars, prompting human resource management scholars to continue to explore in this field. If enterprises want to adapt to the development of society and promote its modernization, it is necessary to make full use of BD technology. In the BD platform, enterprises study the industry market, effectively allocate talents, and reasonably and scientifically manage the internal human resources of the company, so that the employees of the company can give full play to their talents to promote the rapid development of the enterprise [2].

In today's society, the arrival of BD can be said to be a change in the economic field. Domestic and foreign scholars attach great importance to the emerging BD, and have conducted in-depth research, trying to promote the application and innovation of BD in human resource management. Schen once pointed out that BD will bring changes to our thinking and have a profound impact on our daily work mode. For enterprises, how to use the advantages of BD for human resource management, so as to
serve the development of enterprises, has become an inevitable content for enterprises to obtain and maintain competitive advantage in the new era [3]. Based on the development background of BD era, the company and the enterprise constantly innovate the mode of human resource management. This change effectively breaks through the traditional management mode, solves some problems of human resource management, establishes new management concepts and professional ethics, and constantly improves the quality of internal personnel. Enterprises not only need this change, but also colleges and universities need it. The human resource management mode based on BD platform can make human resource managers know what to do, implement the people-oriented development idea, effectively analyze the overall development status and future development goals of enterprises, solve the problems existing in the actual development process of enterprises by developing new ideas, and effectively optimize the internal defects and management of enterprises Problems in the process. In the process of modernization, enterprises should make it clear that due to the rapid development of information technology, innovation of human resource management mode is particularly important to enhance the market competitiveness of enterprises. Therefore, in the process of development, enterprises should pay attention to the reform of human resource management mode [4].

This paper analyzes the shortcomings of the traditional human resource management model and the new era of human resource management Sever model calculates and analyzes the human resource management mode based on the database, and uses the data to prove that the innovative management mode is necessary, and proves that the human resource management mode based on the database is superior to the traditional human resource management mode through comparison.

2. Human Resource Management under Big Data

2.1 Human Resource Management

The traditional enterprise human resource management relies on people to manage the enterprise's human resource information. There are many problems in this management mode, which can not adapt to the rapid development of science and technology in today's society: first of all, the management concept is backward. In the traditional domestic enterprises, the concept of human resource management is relatively backward. The old ideas of the enterprise will affect the overall use concept and human resource management of the company. The professional requirements of human resources department are strong, and they need certain professionalism in recruitment, training, social security management and other issues. However, traditional ideas will affect the internal management of enterprises, and enterprise leaders often focus on loyalty, family and other factors. But now the professional ability is getting more and more attention. The traditional evaluation mechanism has a serious obstacle to the development and progress of enterprise ideas, and it will also hit the enthusiasm of grass-roots employees, so that the enterprise's human resource management is at a low level, and it is difficult to play a better management effect [5].

This kind of incentive dilemma is particularly significant in Colleges and universities. The following table shows the wage structure of five private colleges and universities in Shaanxi Province.

| Name Of University          | Base Pay | Fringe Benefits                                      | Remarks                                      |
|----------------------------|----------|-----------------------------------------------------|----------------------------------------------|
| Xi'an Foreign Affairs College | 15-30w / Year | Housing Subsidies, Start-Up Funds For Scientific Research And Settling Down | Pay "Five Insurances And One Fund", Provide Spouse Work, Children Enjoy Preferential Policies Of School |
| University                  | Expenses                                                                 | Motivations                                                                 |
|-----------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Xi'an Eurasia University    | 8-12w / Year                                                              | Five Insurances And One Fund, Overseas Tourism, Preferential Policies For Children To Go To School, Love Mother And Baby Room, Promote The Growth And Development Of Employees, And Provide a Good Organizational Atmosphere |
| Xi'an Peihua University     | 12-40w / Year                                                             | Five Insurances And One Fund, Annual Physical Examination, Overseas Study, Multi-Level Activity Organization And Self Realization Channel |
| Xijing University           | Structure Wage Standard Of Scientific Research Teachers                   | Five Insurances And One Fund, Children Enjoy The Preferential Policy Of School |
| Xi'an Fanyi University      | According To The Salary Standard Of Full-Time Teachers                    | Five Insurances And One Payment, Regular Physical Examination, Lunch Allowance, Children's Nursery And General Education Regular Bus, Holiday Greetings, Summer And Winter Vacation With Full Salary, Free Training, Foreign Exchange, Etc |

(Data Source: Compiled By The Author)

It can be seen from the above table that the incentive of university staff tends to be in the traditional form. In addition to the relatively stable basic salary and basic welfare, other incomes such as housing subsidies, research start-up funds, and settling down expenses are the watershed of widening the wage gap between teachers. The main performance is that teachers with different qualifications in different schools have differences, teachers with the same qualification in different schools have different treatment, and teachers with different qualifications in the same school have different income.

In the process of materialized incentive, quantitative post appointment and assessment system is the main factor to be considered. It can eventually lead to teachers working hard for the number of scientific research achievements, lack of thinking and innovation precipitation; lack of spirit of unity and cooperation, no one is willing to do collective public affairs, and no one is willing to cooperate with each other. On the other hand, the idea of "the stronger is stronger" is difficult to motivate young teachers and lacks the principle of fairness.

Secondly, the pertinence of personnel training is weak. In the traditional personnel training process, most of the training work is carried out under the organization of the human resources department.
Professional trainers are employed to train the employees. However, the late effect is often not good, because the lecturer's cognition of the specific status of the enterprise is limited, and the situation of the employees is not clear before the course. Therefore, such a teaching process often can not accurately grasp the exact needs of enterprises, and it is difficult to solve the practical problems of enterprises from the technical level [6]. At the same time, employees are independent individuals. There are personality differences between them, and the demand for learning content and the ability to understand are different. Therefore, in the training, it is difficult for teachers to carry out personalized teaching, resulting in poor training effect.

The most important thing is that the post deployment is difficult to be scientific and effective. In human resource management, it is difficult to deal with the post transfer of employees. In large and medium-sized enterprises, the transfer of responsible personnel is very difficult. In this process, the evaluation of the department head is often considered to be the most important and basic. This kind of evaluation mainly comes from the personal experience or emotional impression of the department head, so the subjective factors are too strong, which may bury the most suitable and best candidate, thus reducing the production efficiency of the enterprise. In addition, there is often a lack of clear evaluation criteria in the process of transfer, which makes the personnel deployment process in a gray area.

2.2 Development Trend of Human Resource Management Mode

The main function of an enterprise is to exchange profits by creating value. In the process of enterprise management, labor force is the most important factor to create value. At the same time, enterprises also need labor to transform their labor input into economic income. Therefore, human resource management is an important part of the enterprise. However, with the change of social structure and the diversification of work concept, the traditional human resource management mode has been difficult to cope with the rapidly changing society [7]. In recent years, with the rapid development of the information age, the capacity of information data is extremely huge. All levels of society begin to pay attention to how to apply the concept of BD, which is of great significance to the innovation of human resource management mode [8].

In the new era, the society and enterprises have higher requirements for human resource management. In the context of the continuous development and application of BD technology, the human resource management mode of all walks of life has also undergone significant changes. In order to effectively enhance social influence and improve competitiveness, enterprises must effectively apply BD technology to human resource management, so as to give full play to the advantages of BD technology, provide data guarantee for enterprise internal human resource management, promote work efficiency, and meet social needs [9].

3. Experiment of Human Resource Management Mode Based on Big Data

3.1 Human Resource Management Model Based On Sql Sever

SQL Sever human resource management model consists of personnel management subsystem, position management subsystem, recruitment management subsystem and training management subsystem. The management model unifies the services and interfaces provided by each subsystem. The interfaces and services of each subsystem need to retrieve the required information resources in the SQL Sever database to realize the sharing of information resources. The data of the subsystem is input and output in the SQL Sever database. The function modules of human resource management model of SQL Sever mainly include user management module, resource storage module and query module. After logging in the user management module, the enterprise can remember the data storage and query module, realize the entry and retrieval of personnel information, position information, recruitment information and training information, and provide effective support for the company's efficient management of human resources.
3.2 Data Calculation Formula
In this paper, by selecting the most representative three kinds of centrality indicators as the calculation objectives, we test the human resource management model based on SQL Sever database, which are degree centrality, proximity centrality and betweenness centrality respectively, to calculate the efficiency of human resource management model based on BD and traditional human resource management model:

\[
C_D(i) = \frac{C_D(i)}{n-1}
\]

Where CD (i) is the degree of data I and N is the total number of nodes of data.

Degree centrality is the most direct index to measure system data, and its value is directly determined by the number of adjacent nodes. In the calculation of calculation formula, all data are obtained from the data center, and the distributed graph calculation method of data distributed storage is used in the high interactive calculation task of calculation data. Using the above formula, we can accurately calculate the efficiency of human resource management mode based on BD and traditional human resource management mode, and compare the differences between them, so as to identify the advantages of BD based management mode.

4. Data Analysis of Human Resource Management Mode Based on Big Data

4.1 Role of BD in Human Resource Management Mode
In the era of BD, BD is closely related to the development of employees' potential. Developing the potential of employees plays an important role in the sustainable operation of enterprises. The development of employees' potential is one of the core contents of human resource management activities. Using BD platform to develop employees' potential can accurately judge all aspects of employees' quality conditions, so as to effectively and fully develop employees' potential. By analyzing the behavior of employees, BD makes employees have the potential to develop in corresponding fields, and makes more comprehensive potential development plans for employees.

The traditional enterprise salary reward system mainly relies on performance evaluation and human measurement. On the one hand, these two ways will increase the business volume of enterprise human resource management, on the other hand, there is the problem of insufficient consideration of the existing standards. In order to establish an effective incentive mechanism, it is necessary to comprehensively investigate the behavior of employees. But in the traditional mode, there are still many deficiencies and defects in the wage incentive system, which need to be further improved. Moreover, if BD is included in the wage incentive system, the wage incentive system of enterprises can be improved. BD can be analyzed and recorded through computer technology to form a certain performance level, which is also the salary reward system for employees.

| Project                                      | Satisfied | Quite Satisfied | Commonly | Dissatisfied |
|----------------------------------------------|-----------|-----------------|----------|--------------|
| Traditional Human Resource Management Mode   | 2.27%     | 15.91%          | 54.55%   | 27.27%       |
| Human Resource Management Mode Based On BD  | 12.82%    | 77.95%          | 7.05%    | 2.17%        |

In the era of BD, the enterprise human resource management mode is constantly reformed, which effectively optimizes the human resource management mode, promotes the enterprise to build a new human resource management team, and is conducive to establishing a new concept of human resource
management. Human resource management is an important cornerstone of the continuous growth of enterprises. The innovation and development of human resource management mode can improve enterprise cohesion, create a good enterprise atmosphere, and promote the healthy development of enterprises.

4.2 Analysis of Calculation Results

According to the selected central indicators, the efficiency of human resource management model based on SQL Sever database and the efficiency of traditional human resource management model are tested and calculated. Through the collection and calculation of data samples and calculation formulas, the efficiency of human resource management model based on SQL Sever database can be compared with that of traditional human resource management model, as shown in Figure 1.

![Figure 1](https://via.placeholder.com/150)

**Figure 1.** Comparison between the efficiency of human resource management mode based on BD and that of traditional human resource management mode

The experimental results show that the efficiency of human resource management model based on SQL Sever database is much higher than that of traditional human resource management model.

In today's society, the use of BD to manage human resources, including the use of BD tools for recruitment, more targeted training, scientific deployment and the development of fair reward and punishment plan. The human resource management mode based on BD can more intuitively present the employee satisfaction. Through the survey on the satisfaction of employees of a company with traditional human resource management and BD based human resource management, the specific situation is shown in Figure 2.
From the efficiency comparison chart and satisfaction survey comparison chart, we can see that the human resource management mode based on BD is better than the traditional human resource management mode, whether from the perspective of the company or from the perspective of employees. Therefore, as a social enterprise, it must fully comply with the social development and competition trend under the background of BD development. The company needs to change the traditional management concept, pay close attention to the internal human resource management mode of the enterprise, constantly explore and innovate the management mode, and actively use the advantages of BD to improve the efficiency and efficiency of the company's human resource management Quality, promote the development and progress of enterprises, and lay a good foundation for the long-term and stable development of enterprises.

5. Conclusions
To sum up, BD is one of the most significant characteristics in the information age. Enterprise human resource management should seize this characteristic to carry out reform and innovation, and solve the common problems existing in the traditional human resource management mode of Chinese enterprises [10]. At the same time, we should overcome the new problems of the human resource management mode based on BD, such as the imperfect information feedback mechanism, the imperfect human resource training mechanism under the background of BD, and the imperfect employee incentive mechanism under the background of BD, so as to give better play to the advantages of BD and promote the long-term development of enterprises.

Acknowledgments
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