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ORIGINAL

RESEARCH ON THE LEGAL SYSTEM OF ATHLETES' OCCUPATIONAL MENTAL HEALTH PROTECTION

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ABSTRACT

With the rapid development of market economy, the competitive pressure of athletes has increased, which has led to a series of occupational health problems. The occupational Mental Health Protection (MHP) of athletes are more easily ignored because of their hidden characteristics, thus causing psychological and even physiological damage to athletes. The right to work environment refers to the procedural right with "employee participation" as the core in order to protect athletes' occupational safety, physical and MHP and personal dignity, and prevent athletes from being harmed by the working environment. The legal protection of athletes' MHP is a multi-faceted issue, and every country will take different measures according to its specific national conditions. With the help of new technologies such as big data and cloud computing, a new round of industrial innovation is booming, which has greatly changed the traditional industries and their business methods, and further improved social productivity. In this paper, the author selects the increasingly serious problem of algorithm discrimination as the entry point, in order to find an effective way to effectively regulate big data and big data algorithm problems. This paper briefly introduces the scientific meaning and value significance of athletes' occupational health, analyzes the shortcomings of protecting athletes' occupational health in China at present, and puts forward improvement suggestions from the aspects of legislative style, law enforcement and social concern.

KEYWORDS: Mental Health Protection, Athletes occupation, Legal system, Big Data

1. INTRODUCTION

The mental health of athletes has garnered increasing attention in recent years, particularly as the pressures of competition, public scrutiny, and personal expectations can lead to significant psychological strain. In the context of a big data environment, this research aims to analyze the existing legal frameworks surrounding athletes' occupational mental health protection and propose enhancements based on data-driven insights. According to the research of the World Health Organization, among the many reasons that affect the working efficiency of athletes around the world, the MHP problem of athletes is the most significant one (Harvey et al., 2022). The MHP of athletes hinder the development process of enterprises all over the world to a certain extent, and bring certain losses to the progress of enterprise productivity and even economic development. Athletes' right to work environment is of great significance to protecting athletes' vital interests, realizing athletes' decent work and promoting athletes' physical and mental balanced development (Woelbert et al., 2019). The average working time of athletes in China is the longest in the world. In recent years, the death caused by overwork is increasing (Kusumoto et al., 2019). The MHP of athletes have a huge impact. While their own health is damaged, they delay the work of the employer, which virtually increases the workload of other athletes, and also brings about the contradiction between the supply and demand of athletes in the labor market (Mahedy, 2012). However, athletes' work pressure can't be effectively released, their MHP can't be effectively solved, and they are in a depressed state for a long time, which will directly affect athletes' work efficiency and enthusiasm for work, thus leading to unemployment or even suicide, and hindering the social and economic development of China. According to China's statistics, there are 287,000 suicides in China every year, of which 80% are suffering from depression. Among them, the athletes who commit suicide due to depression can't avoid the reasons from work, which is a big obstacle to the construction of a harmonious society (Braathen et al., 2013). In international trade, some developed countries have imposed economic boycott and sanctions on China under the pretext of ineffective prevention of occupational diseases, which has affected China's economic development. Based on the natural unequal relationship between athletes and employers, it is a necessary measure to ensure the MHP of athletes by stipulating their rights and obligations at the legal level to achieve substantive equality between them. At present, although there are no special laws and regulations on the protection of athletes' MHP in China, there are explicit provisions on athletes' rights and employers' obligations in relevant laws, which indirectly protect athletes' MHP (Kim et al., 2022). In the era of big data, the traditional "three axes" regulation path with the main ideas of informing and permitting data, fuzziness and anonymity of key data seems to have failed in front of the powerful data processing and forecasting functions of big data. Only by deeply regulating the algorithm as its core can a more

effective solution path be provided (Xu et al., 2018). In the era of massive big data, data itself has no value, and the algorithm determines its value (Lemey et al., 2016). This is the purpose and core of big data. Through all kinds of sensors, people's behavior is transformed into huge and disorderly data, and big data algorithm realizes the transformation from data to behavior. Operators use big data algorithm to predict users' behavior, provide customized goods and services, improve the quality of services, realize what users think, and make the leap from goods to value more accurate and faster. With the continuous development of market economy, advanced technology and science and technology have changed the traditional mode of production, but also brought new health problems. It is far from being possible to guarantee the realization of athletes' health rights and interests only by the daily supervision and management of labor law enforcement departments. In addition, China's surplus labor force, increasingly fierce social competition, and a large number of labor force are unemployed, which makes the value of labor force fall and the health rights and interests of athletes lack protection.The above situation highlights the seriousness of the social problems caused by the psychological health problems of athletes, and warns us of the urgency and importance of protecting the psychological health of athletes from the legal level. However, there is no explicit legislation on the protection of athletes' MHP in China's current laws. The explicit provisions on MHP are only symbolic provisions, and there are no legal provisions on the specific obligations of employers in terms of MHP; Secondly, the compensation for the psychological damage of athletes in our country is in a subsidiary position, and it is possible to get compensation only on the premise of suffering physical damage caused by industrial accidents, and it is resolved according to the civil law, not the labor law. This paper first gives a general interpretation of the definition of big data technology and the relationship between them. Then, by analyzing the specific acts of violating citizens' privacy in the age of big data, and combining the current situation of China's legal system, it explores the problems in the current legal system. Its innovation lies in: (1) From the existing research, the research on algorithm discrimination in big data is mostly from the perspective of empirical analysis, that is, research and discussion on algorithm discrimination in all walks of life. (2) Systematically and deeply excavate the main problems existing in the legal system of labor protection in the era of big data.

2. Related Work

For the domestic research status, this paper collects and sorts out the relevant content categories according to the topic selection and thesis framework, and puts forward my own views after summarizing the research status in this category. Today, in building a socialist society ruled by law with China characteristics, the legal protection of athletes' occupational health and safety becomes increasingly important. Although China has made some achievements in protecting athletes' occupational health, the overall situation is

still grim. Through the improvement of relevant systems, we can improve our country's respect for athletes' human rights, realize the legal protection of athletes' occupational health, promote the construction of socialist labor legal system, and cultivate athletes' awareness of self-protection, so as to fundamentally prevent and eliminate athletes' safety and health hazards. Mph B has tried to put forward four targeted measures against many problems in legal concepts and entity regulations caused by big data algorithm discrimination: first, hierarchical management and dynamic authorization of personal information should be carried out to prevent information abuse (Mph, 2012). Through the use of big data, Abhiram M K can solve many affairs that cannot be controlled at the macro level through data. Through data collection, processing and analysis, we can get more scientific conclusions that cannot be drawn with the naked eye or consciousness and thinking. At present, we are in the trend of big data era, and big data is used everywhere (Abhiram et al., 2022). Anna J Kon é Pefoyo put forward three key points on how to identify athletes. First, take legal and effective written labor contracts as the identification basis, and take them as the main identification basis; The second is to grasp the nature of athletes and judge from their attributes; Third, it is not limited to contract or judgment from attributes (Pefoyo et al., 2014). Greenberg N advocates that the establishment of labor contract relationship should meet two standards at the same time, one is subordination, the other is that both parties agree (Greenberg et al., 2021). Taking "subordination" as the core element to define the identity of athletes, and in order to protect athletes in atypical labor forms, the identification criteria for the element of agreement of the parties' expression of will should be relaxed. Norder G proposed that the right to work environment is a combination of physical health and MHP, which is unequal and superior to the traditional right to occupational safety and health. The right to work environment emphasizes employee participation (Norder et al., 2015). Antje G believes that from the perspective of MHP, there is no conflict between the two views. Whether the expansion of the right to occupational safety includes increasing the protection of athletes' MHP, or the rights and interests that include athletes' MHP have become a new right, the right to work environment, which is a breakthrough on the basis of the original right to occupational safety (Gerofke et al., 2018). Long W R believes that in case of labor disputes, athletes can divide the rights and obligations of the two units according to the dispatch agreement between the dispatching agency and the employer (Long & Scali, 2014). If there is an agreement, it shall be handled according to the agreement; otherwise, it shall be handled according to the nature of rights and obligations. Hastie C E analysis, legal protection of athletes' MHP refers to bringing athletes' MHP into the protection scope of laws and regulations according to law, taking athletes' MHP as the adjustment object, and safeguarding their rights and interests through legal means when athletes' MHP rights and interests are violated (Hastie et al., 2022). Olayinka O advocates that the application of labor standards between dispatched athletes

and regular employees must be absolutely equal, that is, the absolute equality of personal rights; Appropriate differences in remuneration between dispatched athletes and regular employees can be allowed, that is, the relative equality of property rights (Olayinka et al., 2017). Hu Y pointed out that the content of the legal system was not systematic and perfect enough, such as the lack of operable measures, the lack of a sound trade union rights protection system, the lack of the concept of rehabilitation and reconstruction, and the lack of a perfect right relief system (Hu et al., 2022).

3. Methodology

3.1 Analysis on the Legal System of the Protection of Athletes' Occupational MHP

Having a healthy body or a sound mind is a prerequisite for athletes to engage in professional labor. As a right to protect athletes' life and health, the right to occupational health not only relates to athletes' life and health interests, but also reflects modern society's concern for their health value and respect for their personal dignity. Occupational safety is the concrete and objective expression of athletes' personal safety in the field of labor relations. It belongs to the field of personal safety and is an important factor that constitutes the safety of civil society. At the same time, legalization refers to the right to occupational safety, and the life, health and safety of athletes are the legal benefits of occupational safety. It is in line with the development trend of China's labor rights, as well as the development trend of legal protection of labor rights, to add the content of athletes' MHP protection at work into the scope of occupational safety rights and legally guarantee it. As for the understanding of the term "occupational health", the Convention on Occupational Safety, Health and Work Environment adopted by the International Labour Organization (ILO) in 1981 explains it as follows: the term "health" related to work not only refers to the absence of disease or infirmity, but also includes the physical factors directly related to work safety and health that affect health. It can be seen that occupational health is a good state of athletes' physiological and psychological functions, with strong self-perception. In the labor law, labor refers to an activity in which an athlete transfers the right to the use of labor to the employer with whom the contract is signed, and engages in personal subordination and division of labor and cooperation according to the instructions of the employer. The concept of athlete closely related to labor is also different in different disciplines, and its concept in the Constitution or different department laws is also different from the legal perspective. In the civil and commercial law, the laborer refers to the parties who, through equal consultation, trade their labor or services and labor products in the market as commodities or capital, so as to seek the means of subsistence or the source of income. It can be seen that once an athlete in the labor law signs a contract with the employer, he or she cannot work according to his or her own wishes, which is significantly different

from the free athlete and self-employed person in the civil law who work according to his or her own wishes. In general, the age range of athletes in the labor law is over 16 years old, before they enjoy the endowment insurance (Eliasson et al., 2022). The lower age limit can be relaxed in special units such as sports and physical culture, and those who have begun to enjoy pension insurance but still provide labor beyond the upper age limit are legally classified as civil law athletes. Therefore, in the process of working for the employer, although the athlete's behavior is restricted by the employer, he is still a natural person with independent personality and naturally has the right to safeguard his own personal interests. Employee budget management, report and query and other major business function modules. The distribution system is shown in Figure 1.

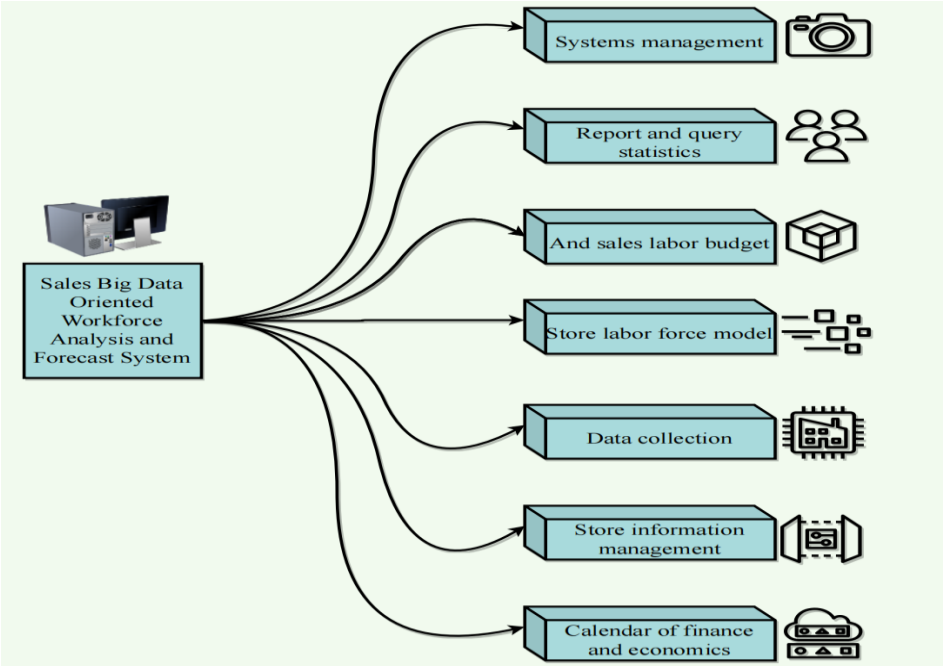

Figure 1: Overall Functional Structure of Laborers

Therefore, on the basis of understanding the meaning of "health", at the same time, by comparing different concepts of occupational health in foreign countries and summing up the actual situation of our country, the definition of occupational health of athletes should be: the rights and interests related to the fact that athletes are protected from potential risk factors in the workplace in the course of working according to law, so as to keep good physical and mental condition.

3.2 Research on Big Data Technology Combined with Athletes' Occupational MHP

The era of big data is the era when the network covers all life. The acquisition and use of big data are inseparable from the Internet and users. Users are the actual creators of big data assets, and Internet operators are the

users of big data and big data algorithms. Analyzing and studying the behaviors directly related to the interests of both parties can help us understand the essence of discrimination in big data algorithms (Maroney et al., 2014). The big data algorithm can predict the consumption surplus of consumers through the historical behavior of individuals. The pursuit of profit efficiency of enterprises dominates the efficiency bias of big data algorithm design. The information asymmetry formed after the popularization of Internet platforms makes it possible to price separately (Ceramidas, 2010). Therefore, the potential benefits brought by low-cost big data algorithm technology stimulate operators to deviate from traditional pricing strategies and turn to discriminatory and differentiated pricing using big data algorithms. The following steps are the basic model for labor demand forecasting in this solution. They do not represent all the implementation details, but can help to understand the entire solution. As shown in Figure 2.

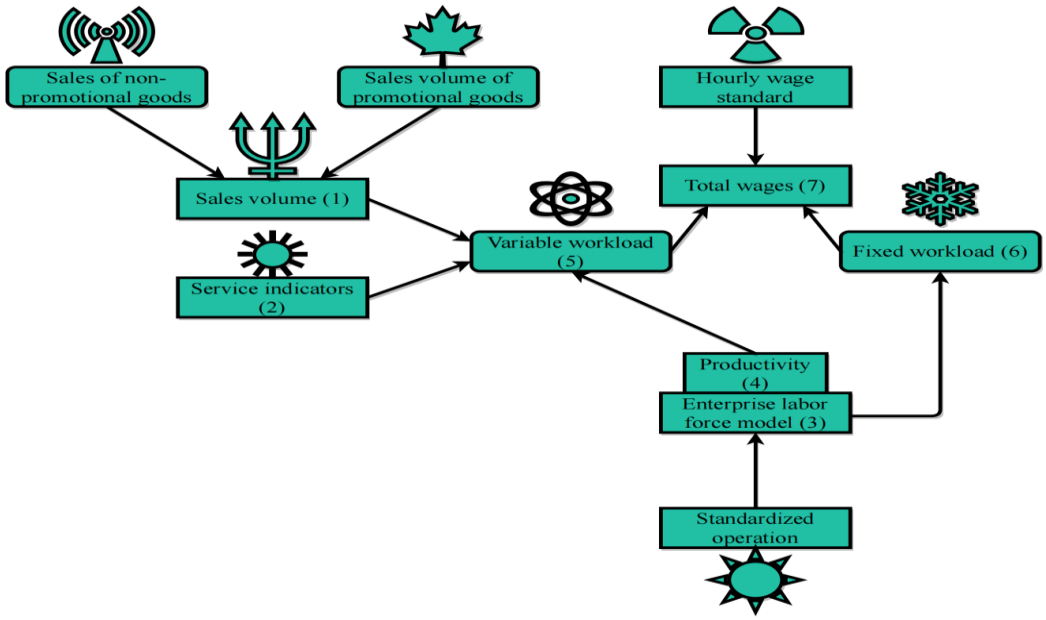

Figure 2: labor demand conversion model

Occupational health is enjoyed by athletes, and is dominated by their own health and personal freedom related to health. The protection of athletes' occupational health is embodied in the following aspects: firstly, within the scope permitted by law, athletes can do or not do certain behaviors in order to protect their own lives; Secondly, athletes can ask employers to provide them with necessary safety and hygiene conditions and labor protection articles; Finally, once a athlete suffers personal injury, within the scope permitted by law, he can take certain measures to provide relief. Occupational health is the specific expression of the right to life and health of athletes, and it is the personal interests that athletes can enjoy with their own lives and health as the object. The basis of all rights and freedoms is the physical existence of human beings (Parsons, 2013). The right to life is the primary right of human beings

and the highest value embodiment. In order to deal with massive information to obtain commercial value, the birth of personalized recommendation system solves the problem of information overload. Personalized recommendation system is an intelligent platform for advanced business services, which is produced by the development of Internet and e-commerce and based on data mining technology. As a "bundle of rights", the right to occupational health should be fully and completely protected by relevant laws. However, the relevant provisions of the Law on Prevention and Control of Occupational Diseases and the Law on Safe Production only stipulate that athletes have the right to refuse illegal instructions and force operations without protective measures. As shown in Table 1.

Table 1: Legislative Protection of Occupational Health in Occupational Disease Prevention Law and Work Safety Law

RIGHTS THAT SHOULD BE STIPULATED	RIGHT TO OCCUPATIONAL HEALTH TRAINING	RIGHT TO KNOW ABOUT OCCUPATIONAL HAZARDS	ACCESS TO PERSONAL PROTECTIVE EQUIPMENT	RIGHT TO WORK IN A SAFE AND HEALTHY ENVIRONMENT	RIGHT TO EXAMINATION AND TREATMENT OF OCCUPATIONAL DISEASES
OCCUPATIONAL DISEASE PREVENTION LAW	√	√	√	×	√
SAFETY PRODUCTION LAW	√	√	√	×	×

It is not clearly stipulated that the operating equipment and materials, operating methods and operating environment provided by the employer shall comply with the statutory standards on safety and health, so as to prevent personal injury to athletes. In addition, the Work Safety Law does not explicitly grant athletes the right to examine and treat occupational diseases. However, athletes may also suffer different degrees of injuries to their limbs and organs due to the risk factors existing in production operations. For acute accident injuries, they should also be examined and treated. Therefore, the legislative protection of occupational health right in the current Occupational Disease Prevention Law and Work Safety Law of China needs to be improved. After collecting the preference data, the data is preprocessed, and the core operations are noise reduction and data standardization. There are many false evaluations or malicious billing phenomena in the e-commerce platform, so it is necessary to deal with the abnormal values and missing values of the collected data, that is, noise reduction. However, there may be a big numerical deviation between the collected preference data, so it is necessary to normalize the data to reduce the differences and standardize the data. After collecting the preference data, users who are similar to the target users or goods with similar

preferences can be calculated according to the user preference data, and the calculated similarity can be used to recommend the preference results to athletes. The data analysis subsystem of the functional layer applies the K-means clustering algorithm in big data analysis technology to mine hidden rules and valuable information from massive evaluation data. On this basis, the deep neural network with five hidden layers is used to extract MHP features and obtain more accurate MHP intelligent evaluation results. Euclidean Distance is the real distance between two users' scoring data in multidimensional space:

$$sim(x,y)=\sqrt{\sum_{t\in U_{xy}}(x_i-y_i)^2} \tag{1}$$

U_{xy} indicates the set of items scored by two users together, and x_i indicates the evaluation score of users x on item i. Pearson Correlation is to find the products that have been reviewed by two users, calculate the sum of scores and the sum of squares, and then calculate the Pearson correlation coefficient:

$$sim(x,y)=\frac{\sum_{i\in U_{xy}}(R_{x,i}-\overline{R_x})(R_{y,i}-\overline{R_y})}{\sqrt{\sum_{i\in U_{xy}}(R_{x,i}-\overline{R_x})^2}\sqrt{\sum_{i\in U_{xy}}(R_{y,i}-\overline{R_y})^2}} \tag{2}$$

R_{xj} indicates the evaluation score of users x on item i, and $\overline{R_x}$ indicates the average evaluation score of users x. Cosine Similarity evaluation takes the project as the feature vector and the cosine value of the included angle of the project as the similarity evaluation standard. The smaller the included angle, the higher the similarity.

$$sim(x,y)=\frac{\sum_{i\in U_{xy}}R_{x,i}R_{y,i}}{\sqrt{\sum_{i\in U_{xy}}R_{x,i}^2}\sqrt{\sum_{i\in U_{xy}}R_{x,i}^2}} \tag{3}$$

The above similarity calculation methods have their own characteristics. In reality, choose different similarity calculation methods in combination with actual application scenarios.

3.3 Algorithm Framework

Now that big data has become a trend, with the development and progress of digital technology, the way to protect personal information has gradually failed to play its due role. At present, the protection methods for personal information in China can be summarized into two aspects, namely, legal protection and self-discipline protection. First of all, we should strengthen the construction of industry self-discipline system and improve its development.

The self-discipline norms of the industry should be judged according to the situation of the industry itself, reduce some general and principled norms, and use more practical norms. At the same time, it should be noted that the relevant requirements of laws and regulations must be observed. Then, we should establish a management and supervision system for self-discipline, and strengthen the self-discipline of enterprises through the supervision of relevant institutions. It can improve the main body. In this age of big data, it is difficult to find the main body by spreading and using information for many times. Therefore, people who collect and analyze information should be regarded as defendants. It can also improve the existing litigation system. At the same time, specialized institutions and professionals should be used for litigation. In order to reduce the decisions made by individualism, the litigation system can actually help more people solve the problem of personal information theft. The hidden layer processes the data with unobvious psychological features, so as to ensure that the extracted feature dimensions are greatly reduced and the discrimination is enhanced. The output mean value of hidden layer can make the characteristic trend of psychological. Let $U_i = \sigma_i$ represent the clustering features obtained, and σ_i corresponds to the$i$ mental problem feature. The average value of the features in the hidden layer is:

$$H_{i,t} = \frac{1}{L}(h_{i,1} + h_{i,2} + \cdots + h_{i,L}) \tag{4}$$

Where, $h_{i,L}$ represents the nonlinear output vector of the i feature in the row L, and the network features are obtained by the mean value of hidden layer features:

$$F = \frac{1}{T}\sum_{i=1}^{N}\sum_{t=1}^{T} H_{i,t} \tag{5}$$

Where, T represents the characteristic dimension. Formula (5) can be used to obtain the practical feature after dimension reduction. According to this feature, the effective feature component in the mean value feature of the hidden layer can be calculated.

$$E = H_{i,t} - F \tag{6}$$

$$x_j^l = f(\sum_{i \in M_j} x_i^{l-1} * k_{ij}^l + b_j^l) \tag{7}$$

The second and fifth neural network layers adopt batch normalization layer, which is used to normalize the results of the previous convolution layer in batch. The third and sixth neural network layers adopt pooling layer, and the pooling methods are divided into average pooling and maximum pooling. In this study, the pooling method we use is maximum pooling. The operation of the

pool layer is shown in formula (8), where $xl_j, Wl_j, bl_j, down(xl_j)$ respectively represents the input, weight matrix, offset and downsampling functions.

$$\hat{x}_j^l = f(W_j^l) down(x_j^l) + b_j^l \tag{8}$$

In order to combine the features output by the convolution layer and pooling layer, we use a full connection layer in the seventh layer. Before this layer, we first flatten the extracted feature matrix into a vector. After the 2D-CN section, we extracted the characteristics of each student's daily online behavior. In the ninth hidden layer, we used the long-short memory network to capture the time dependence among the days. The calculations are shown in formulas (9) and (10).

$$o_t = \sigma(W^{(9)*}(h_{t-1}, x_t) + b^9) \tag{9}$$

$$h_t = o_t * tanh *(C_t) \tag{10}$$

4. Result Analysis and Discussion

In order to verify the practical application effect of the system in this paper, the psychological evaluation of athletes aged between 18 and 40 in a certain city was carried out. The psychological evaluation data of the population in the 12 months of 2019 were divided into four data sets, namely, 3 months, 6 months, 9 months and 12 months. The data sets were represented by K, N, X and Y respectively. The data set capacity was K=640M, N=1280M, X=2560M, Y＝5120M. As experts and scholars point out, there is still much room for the development of China's labor rights. As an equally important laborer's rights and interests as physical health, MHP should be included in the protection scope of laborer's rights and interests. Therefore, when making legal provisions, China should establish the legal protection concept of paying equal attention to both physical and MHP of laborers, appropriately expand the scope of labor rights under the current legal framework, and bring MHP into the protection scope of laborer's rights and interests. The specific method is that it can be included in the legal protection scope of the right to labor safety and health, but the right to working environment is wider than the right to labor safety and health. It not only means that the facilities and equipment in the workplace should meet the standards for safeguarding the physical health of athletes, but also that all kinds of factors involved in the work should meet the requirements for safeguarding the MHP of athletes. Therefore, when the conditions are ripe, the right to work environment can replace the right to work safety and health. Prevention-oriented has been recognized by all countries as the most effective and cost-effective occupational safety and health protection strategy. For example, depression, a common psychological disorder, is estimated to affect about 350 million people all over the world. Depression is the primary cause of early death and disability-adjusted life years, but many high-quality studies

have shown that psychosocial harmful factors and work-related stress occur before depression. Therefore, as a controllable factor, the working reasons that affect the MHP of athletes can be prevented by active measures. As the legal norms related to privacy protection in China's laws are relatively scattered, and the effectiveness level gap is also different, it is difficult to form an effective and unified restrictive role in specific application, which makes it difficult for citizens to get relief when their privacy rights are violated, and the relevant responsible subjects are also difficult to be punished. Especially in the era of big data, the behavior of Internet enterprises to collect and use citizens' private data is very hidden, difficult to be found, and has great harm. However, because there is no perfect law to support it, many network users are bearing the risk of data security at all times. This also proves that China urgently needs to formulate a special law on privacy protection, and this law should focus on protecting citizens' data privacy security, which also meets the requirements of the big data era under the new situation. The special legislation of privacy protection in China can improve the legal system of privacy protection and ensure the accuracy of law application. At the same time, legislation in the era of big data can not only protect citizens' privacy at a deeper level, but also promote the development of the entire Internet industry. With the guarantee of special laws, user data will be fully utilized in a safe environment, thus promoting the healthy and orderly development of related industries and making great contributions to China's economic development. Taking four psychological evaluation data sets of the urban population as systematic experimental data sets, the following experiments were carried out. 2400 data samples were randomly selected from the psychological evaluation data set, and the data clustering performance was tested by the system and the system in this paper. The comparison results are shown in Figure 3.

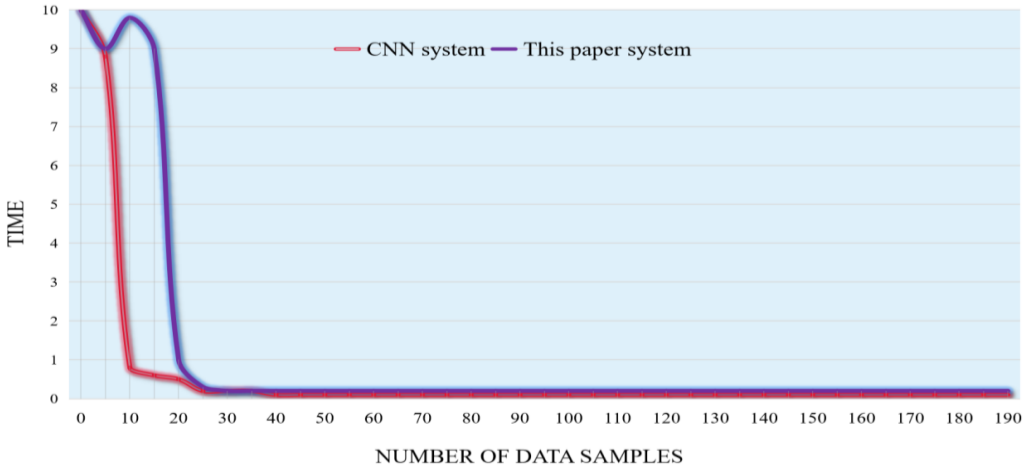

Figure 3: Number of 2400 data samples/one

In order to verify the impact of sample data set size on the clustering performance of the design method, 4800 data samples were randomly selected

from the psychological evaluation data set, and four methods were also used to verify the data clustering performance. The results are shown in Figure 4 and Figure 5.

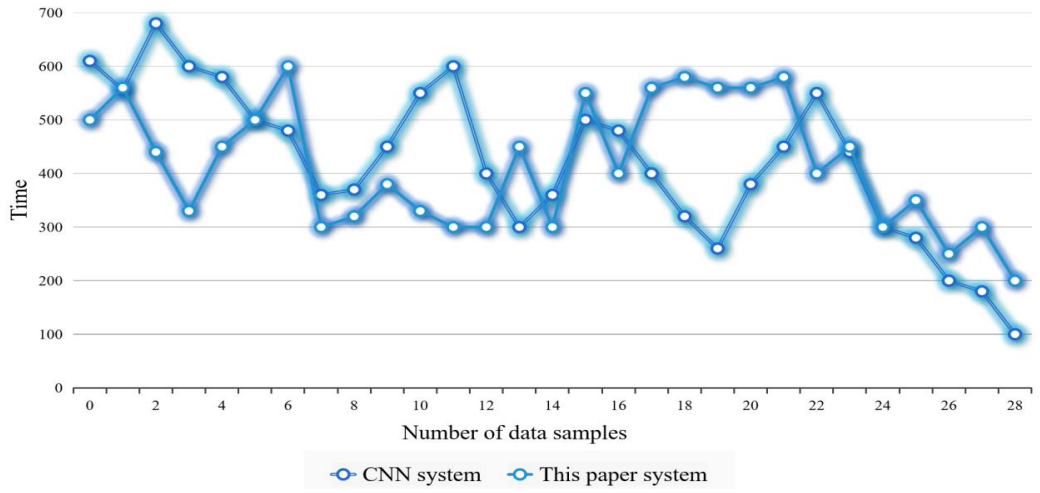

Figure 4: Comparison of 4800 data clustering performance (a)

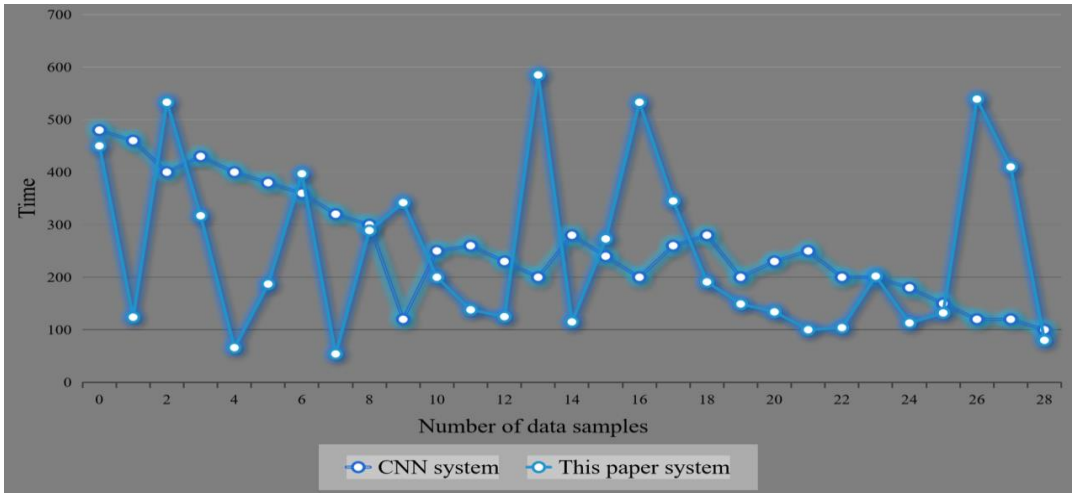

Figure 5: Comparison of clustering performance of 4800 data (b)

According to the analysis of Figure 4 and Figure 5, the time required for system clustering is directly proportional to the number of data samples, among which the clustering time of CNN system increases rapidly with the increase of the number of samples, and it takes a long time. The time required for system clustering in this paper is short, and the time is kept between 0.005 and 0.015 s, which does not change greatly due to the size of data set, and it runs stably, which shows that the clustering performance of this system is strong. Select data set K as this part of the experimental data set, take the mean square error (MSE), absolute error (Mae) and mean absolute percentage error (MAPE) as the measurement standards, and make statistics on the experimental results of MHP evaluation with four systems, which can verify the evaluation performance of the system and measure the quality of the system. The comparison results are shown in Table 2.

Table 2: Measured Results of MSE, MAE and MSE of Two Systems

INDICATOR TYPE	MAE	MAPE	MSE
CNN	1.58	0.78	0.16
TEXT SYSTEM	1.26	0.38	0.12

According to the data in Table 1, the values of MAE, MSE and MAPE of this system are lower than those of other comparison systems. This data shows that the intelligent evaluation error of MHP of this system is low, and its performance is strong, which can realize the accurate evaluation of users' MHP. In order to further test the MHP evaluation performance of this system, data set K is taken as the experimental object, and different noises are added to data set K to test the evaluation accuracy of four systems. The experimental results are shown in Figure 6.

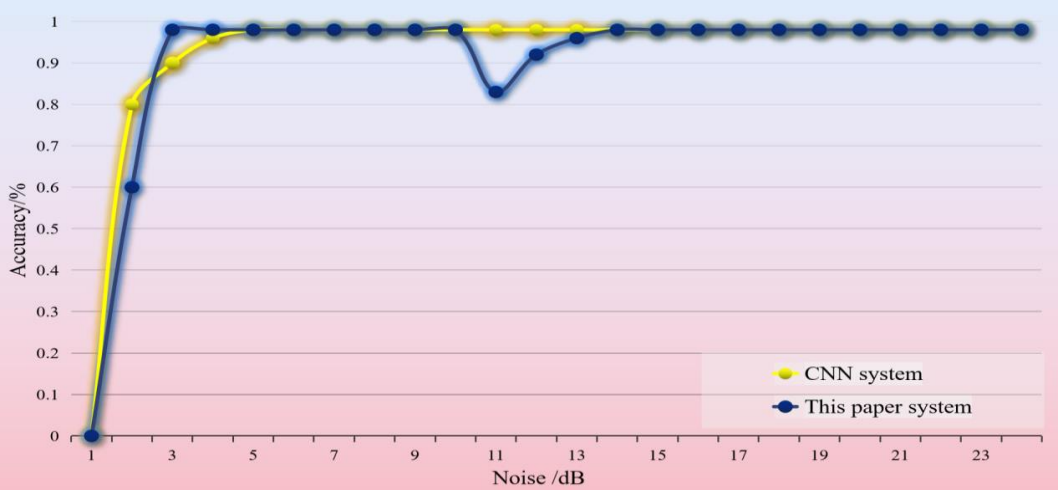

Figure 6: Accuracy test results

It can be seen from the analysis in Figure 7 that the evaluation accuracy of this system and the comparison document system decreases with the increase of noise. The evaluation accuracy of this system decreases slowly, and the value remains between 90% and 99%. For CNN system, the evaluation accuracy curve has a significant downward trend, which proves that the evaluation accuracy is low. Through comparative analysis, it can be seen that the addition of noise has little impact on the evaluation effect of this system, and the evaluation accuracy is high. Although one data may not reflect personal privacy, Internet service providers often collect a large amount of user data, which, when aggregated, will reveal personal privacy. The General Data Protection Regulation prohibits enterprises from collecting and processing private data that can reflect an individual's racial or ethnic origin, political views, religious beliefs, personal genetic identification data, biological data, or personal health, sexual life or sexual orientation. The new legislation can draw lessons from the provisions of the General Data Protection Regulations to delimit the scope of personal privacy, and include some fragmented data that

may reflect citizens' privacy into the scope of personal privacy. Only by deeply recognizing the importance of data protection can the new legislation better protect citizens' privacy rights in the era of big data. For example, Baidu Company, when it collects and uses citizens' private data privately, the regulatory authorities will impose a fine on it and record its illegal behavior. When Baidu Company violates the law for the third time, it will be restricted from entering the Internet industry for three years. Within three years, it cannot carry out network service business; When it commits a serious violation of the law, it will be permanently deprived of its qualification to enter the Internet industry. With these severe punishment measures, relevant laws and regulations on the protection of citizens' privacy rights can be effectively implemented. At the same time, these strict punishment measures are a strong guarantee for the healthy development of big data industry. In order to verify the actual use effect of the system in this paper, the psychological data of 1000 people were randomly selected from the experimental data set as the evaluation data set, and the psychological tracking evaluation was carried out for this population for 12 months. The percentage of changes in the psychological data of this population before and 12 months after the use of the system in this paper was calculated. The comparison results are shown in Figure 7.

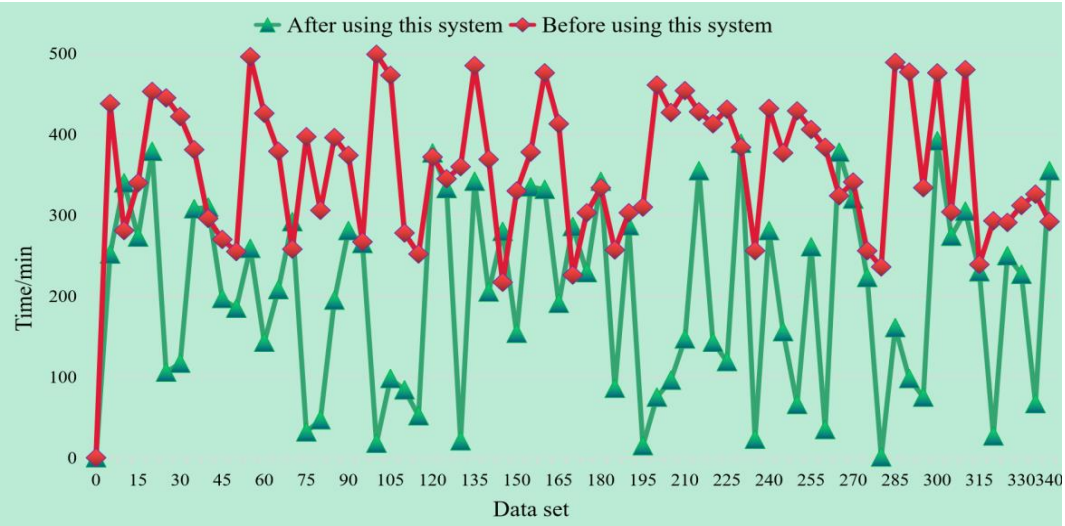

Figure 7: Effect comparison before and after using this system

As can be seen from Figure 7, after 12 months of psychological follow-up evaluation, the proportion of psychological problems of this group of people is significantly reduced compared with that before using this system, and the proportion of all kinds of psychological problems is basically less than 10%. Before using this system, the proportion of all kinds of psychological problems, especially those prone to depression, reaches 35%, and after using this system, it accounts for about 7.5%. It can be seen that this system has a remarkable effect in practical application and can effectively improve the psychological problems of athletes.

5. Conclusions

China's athletes' occupational MHP has not been paid enough attention, and there is no clear legislation on the protection of athletes' MHP in our country, and the research on this aspect is scarce. Big data has changed our society, but it also hides great risks, especially the privacy of citizens cannot be guaranteed. At present, there are still many problems in the legal system of protecting citizens' privacy rights in the era of big data in China, resulting in the illegal collection and utilization of users' privacy data by enterprises, and the serious violation of users' rights. Therefore, this paper summarizes that the information age has brought reform to various fields of society. There are many big data analysis methods, among which CNN algorithm and deep neural network algorithm are widely used. Applying both to the MHP intelligent evaluation system can effectively improve the application effect of the system. Therefore, on the basis of fully protecting citizens' right to privacy, the Chinese government should also strengthen international cooperation, conduct in-depth exchanges and cooperation with other countries, fully tap the potential value of big data, promote the upgrading of China's industrial structure, and enable China to seize the first opportunity in the age of big data. The experiment proves that the MHP intelligent evaluation system designed in this paper based on big data analysis technology has significant advantages.

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