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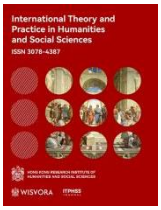

Research on Digitalization of Personnel Archives to Address the Challenges of University Human Resource Management

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Abstract

Currently, there are several issues within human resource management in universities, such as mismatches between personnel and positions, challenges in quantifying performance evaluations, and the frequent departure of top talent. These problems are often linked to the underutilization of personnel archives. By integrating big data principles into the digitization of personnel archives at universities, we can enhance the "intelligent" aspects of human resource management and decision-making. This approach enables science-based management through digital quantification, fully leveraging the potential of university human resources. The article delves into the digitization of personnel archives using big data principles to address the challenges faced by university human resource departments and to foster the advancement and progress of various university initiatives.

1.Introduction

There are many problems in human resources management in universities, such as how to promote the optimal allocation of human resources in universities, carry out more targeted teacher training, realize fair and objective performance appraisal, motivate and fully mobilize the enthusiasm of teaching staff and senior experts, and reduce the phenomenon of high-level brain drain. As the basic work of human resources management in universities, personnel archives management should play an important role in promoting human resources management in universities. However, at present, the construction of personnel archives information in universities is limited to the digitization and electronic information of personnel archives, and the establishment of personnel archives information management system in a pure sense cannot fundamentally help solve the practical difficulties faced by human resource management in

universities.

The arrival of big data era provides a new development idea for the digitalization construction of university personnel archives and human resource management. digitalization of personnel archives based on big data thinking will promote the continuous improvement of rationality in the process of human resource management, so as to realize the transformation from traditional experience management to scientific management based on digital quantitative analysis. It will become an inevitable trend to replace satisfactory decision-making with "infinitely close to the best" decision-making, which provides the possibility for fundamentally solving the problems encountered in the process of human resource management in universities at this stage. Therefore, how to develop the digitalization construction of personnel archives management in universities with the help of big data and related technologies, so as to better assist the human resources management process, promote the accurate matching of personnel and posts, improve the real-time, objectivity and fairness of performance appraisal, and provide targeted and personalized incentive and training measures; Accurately predict the development trend of human resources, do a good job in human resources planning and reduce the phenomenon of high-level brain drain, and then optimize the process and results of human resources management, better tap the potential of human resources in universities, and finally promote universities to better realize the fundamental functions of talent cultivation, scientific research and social service.

2.Analysis of the realistic dilemma of human resource management in universities

For a long time, human resources management in universities mainly manages the status quo of human resources in universities (mainly teachers and high-level talents), lacking foresight. At present, because of the limited amount of personnel archives information in universities, the utilization and service are relatively passive, and the human resource management has not been transformed from "experience + qualitative" management to "data + quantitative" management, let alone trend prediction. There are five main problems in human resources management in universities:

a) In the human resources management of universities, it is difficult to achieve accurate matching between on-the-job teaching staff and talents to be recruited. The specific performance is as follows: First, the post setting in the personnel system reform of universities requires accurate matching of personnel and posts. Due to the differences in work content and responsibilities, each post has different requirements on the professional structure, working ability and personality characteristics of personnel, and each person can only adapt to a specific post. In fact, the teaching staff who have been working on the job are not necessarily the most suitable for this post. The mismatch between personnel and posts is not conducive to effective work, nor to giving full play to personal potential, and cannot make full use of their talents. Second, the talents recruited by universities generally meet the basic conditions such as professional and academic qualifications required for recruitment, but they do not necessarily match the positions accurately. According to the existing personnel archives information, it is impossible to establish a talent model that meets the post conditions. It can only be judged by experience. Whether it is an interview examiner or a recruitment unit, dozens of minutes of interview trial can not fully

understand the ability, conditions and personality characteristics of candidates in all aspects. "Interviewers can not obtain comprehensive information about candidates, one-sided, wrong information will inevitably lead to the deviation of the results"(Tambe,2019), therefore, whether it is a written test or an interview link, it is impossible to accurately predict whether candidates in the future teaching, scientific research, student education and management can fully meet the requirements of the post.

b) The quantitative degree of post performance evaluation index in human resource management of universities is not high, the evaluation is mostly in form, and the evaluation result is not effective. The specific performance is as follows: First,"the current human resources assessment in universities is still based on annual assessment, which examines morality, ability, diligence, performance and integrity, lacks detailed assessment indicators for each post, and cannot conduct substantive assessment on the completion of post responsibilities"(Bamel,2014). The assessment evaluation is mainly qualitative and the quantitative degree is low. Second, according to the existing assessment system, the assessment score is closely related to interpersonal relationships and cannot truly reflect the heavy complexity and completion of annual tasks. The assessment results are mostly "hello, I am good, everyone is good", more work less one kind, the objectivity of the assessment is not strong. Third, under the current system, it is difficult to implement measures such as low employment, elimination of the last position, adjustment of posts and dismissal for the teaching staff ranked at the bottom of the assessment results. The assessment has no substantive binding force on the teaching staff and cannot mobilize the enthusiasm of the teaching staff.

c) Human resources planning in universities is based on limited personnel archives information, which cannot predict the future development trend of human resources and lacks foresight.

The combination of some university teacher recruitment plans and the medium-and long-term development trends such as national industrial restructuring is not high. Recruiting teachers is generally the recruitment plan for the second year of the year, mainly to meet the current teaching and scientific research needs, combined with the age, gender, academic qualifications, professional titles, disciplines and other structures of existing teachers, less consideration of social development trends, industrial structure adjustment direction (sunrise industry, sunset industry) and other influencing factors, in the process of personnel introduction, lack of comprehensive data analysis to provide decision-making basis, resulting in the situation of 'introducing according to the needs of the school. This kind of teacher recruitment plan has certain lag, lacks foresight, and does not consider the industry development trend behind the discipline. If the industry is already in the declining trend from prosperity to decline, it is too late to realize that the large-scale introduction of teachers will become the manpower burden of school development when graduates are difficult to find jobs, affecting enrollment and shrinking majors. However, if the industry behind the discipline is a sunrise industry and is in the development trend from weak to strong, then the school will miss a good development opportunity if it does not introduce high-quality teachers and high-level talents in advance to develop this specialty on a large scale.

d) The phenomenon of high-quality teachers and high-level talents loss generally exists in all kinds of universities. The brain drain introduced or cultivated by schools with a large amount of

cost is a great loss to schools."In a large number of universities, there is a phenomenon of brain drain, which has a great restrictive effect on the development of universities"(Zhang,2022). The main flow direction of high-level brain drain is generally: from the geographical point of view, from the prefectural city to the provincial capital city, from the western region to the central region, from the central region to the Pearl River Delta and Yangtze River Delta and other eastern coastal areas; from the hierarchical point of view, from the general university to the key university, from the key university to the domestic top university, from the domestic top university to the overseas university. The common phenomena in the process of real management are: Excellent backbone teachers have stronger competitive advantages in the talent market after obtaining doctoral degrees and appraising senior titles on the job. After comparing various influencing factors such as the treatment and career development platform of their schools with other universities, they often find that there is a big gap between their schools and other schools, and there is a certain psychological gap. However, this gap has not attracted the attention of the human resources management department of our school, unless the current unit has strong attraction in some aspects. Can form a strong sense of belonging against "outside temptation", otherwise leaving will become a high probability event. At present, it is difficult to predict turnover intention, and it is impossible to implement feasible countermeasures to retain talents in advance, and it is impossible to eliminate turnover intention in the bud. When the staff apply for resignation after careful consideration, the human resources department has no power to change their turnover intention.

e) In the process of human resource management in universities, it is impossible to achieve the high customization of training and motivation, and it cannot effectively meet the personalized needs. The reason lies in: first, from the university personnel archives information can not see too many differences between people, everyone is similar. Second, the daily management of human resources does not collect personal personality characteristics, hobbies, real-time needs and other information. Human resources management departments basically do not grasp these personalized data, so traditional training costs a lot of manpower, material resources and financial resources, but can not effectively meet the different needs of talent training. Third,"the current management method still stays in the traditional personnel management concept, only through the formation of fierce competition in salary, but does not adopt scientific and advanced management methods, talent incentive means single"(Zeng,2016), can not meet the individual needs of incentive content, training and incentive effect greatly reduced.

3.The digitalization construction of university personnel archives based on big data thinking will bring about changes in human resources management

Big data has triggered the transformation of the times, which will change the thinking mode and management mode of the digitalization construction of university personnel archives and human resources management. The application of big data will provide a new perspective for human resources management in universities, not only to use the personnel archives information management system to collect "large personnel archives data" in real time, but more importantly, to use data mining and other big data related technologies to quickly process "large personnel archives data", to understand the development trend of human resources in the first time, and to make management decisions in advance to cope with the changes that may be brought about by the trend. With the comprehensive collection of university personnel archives information, the

efficiency of data analysis and the great improvement of the accuracy of human resources development trend prediction, university human resources management will enter a new period of development.

a) With the massive growth of "large personnel archives data" in the digitalization construction of personnel archives in universities, the information base of human resource management in universities will continue to expand.

Different from the previous personnel archives information, the "big personnel archives data" in the university personnel archives information management system does not make any form of selection of data, and objectively forms all the "big personnel archives data" of the teaching staff will be collected to ensure the objectivity and comprehensiveness of the data. First, the "static files" in the paper personnel archives will all be collected and become "active information" in the information management system. Second, information related to the daily work of teaching staff, performance (teaching, scientific research, management, social services, etc.), salary, continuing education and training, attendance, relevant skills, professional qualifications, etc. will be automatically collected by the system. Third, other personal information of staff members, such as personality, hobbies, specialties, health status, social relations, family background and other information are also collected by the system. Fourth, the external environment (including natural environment, social environment, supply and demand of talent market, vertical and horizontal comparison of salary level of each post, etc.), Social networks information reflecting my true intention and other relevant information are also important contents collected by the system. Through the collection of this information, the amount of information collected in the university personnel archives information management system for analysis and use in the process of human resources management will be very large, enough to support the accurate description, evaluation and prediction of the university human resources as a whole and individuals by big data technology.

b) The use of big data technology in the personnel archives information management system of universities will better analyze the correlation between data and help the human resources management department to make management decisions that adapt to the future on the basis of accurately predicting the development trend of human resources as much as possible.

The university personnel archives information management system clusters, classifies and analyzes the "personnel archives data" through big data technology, finds the correlation between the data, and no longer entangled in the causal relationship between the data, so that the university can more accurately predict the development trend of human resource management from a strategic perspective. Every step of human resources management in universities will be based on big data analysis, focusing on the relationship between post demand and personnel conditions, the relationship between social development trend and industrial structure adjustment direction and human resources planning and teacher recruitment, the relationship between factors affecting resignation and high-level talent stability, etc., providing new ideas for human resources management such as post management, human resources planning, teacher recruitment and high-level talent stability. Make human resources management decisions to achieve accurate matching of personnel and posts, construction of teachers team in line with social and economic development trends, effective elimination of resignation incentives and stabilization of high-level talents team, etc., and comprehensively improve the wisdom and efficiency of human resources

management in universities by utilizing the value of "personnel archives data".

c) Human resource management in universities based on big data thinking will be transformed from experience management to scientific management based on digital quantitative analysis.

In the past, human resources management in universities mostly reflected the management based on experience and qualitative management, which was not so much decided by the characteristics of human resources as a management mode that had to be adopted because it could not achieve more objective and quantitative management. In the era of big data, all this will be overturned. All relevant elements such as posts, personnel, work attitude, performance, training and motivation in human resources management in universities are digitized. The data is comparable. It can be quantitatively managed. It accurately and objectively describes the work requirements of posts and the working status, efficiency and results of teaching staff. On the basis of quantitative analysis, human resources management activities such as person-post matching, performance appraisal and salary design can be realized. It is the progress of the times to simplify complicated things. Human resource management in universities will step into the era of scientific management based on digital quantitative analysis.

d) The decision-making goal of university human resource management based on big data thinking will be transformed from satisfactory decision-making to "infinitely close to optimal" decision-making.

For a long time, human resource management in universities has been unable to achieve complete rationality, that is, it cannot meet three conditions: first, the completeness of information; second, it is not bound by time; and third, it must completely and accurately predict the actions of others. Therefore, human resource management decision-making in universities always aims at satisfying decision-making based on bounded rationality, which is exactly what Simon advocates. Satisfactory decision-making means that it basically conforms to the management goal, is not the optimal path to achieve the management goal, can not bring the optimal result, the result is acceptable, but there are such problems, can not achieve optimization. With the introduction of big data and related technologies, with the help of digitalization of university personnel archives, the amount of data information mastered in the process of human resource management, the efficiency of processing information and the ability to predict the future will be greatly enhanced. That is to say, in human resource management, human rationality will be infinitely close to complete rationality, so satisfactory decision-making will inevitably be replaced by "infinitely close to optimal" decision-making.

4.Countermeasures for Human Resources Management in Universities under Big Data Thinking

The essence of university competition is the competition of talents, especially the competition of senior talents and teams. The talent issue has always been the core issue in the development of universities. In the era of big data, only by comprehensively collecting all kinds of data of human resources in universities, on this basis, applying big data related technology, exploring the correlation between data and predicting the development trend of human resources,

can the personnel archives information management system of universities better promote the optimization allocation of human resources in universities, carry out more efficient and targeted teacher training, perfect performance appraisal, fully mobilize the enthusiasm of teaching staff and senior experts, and actively stabilize high-level talents and teams. Therefore, only through the digitalization of personnel archives based on big data can the human resource management of universities enter the track of quantitative analysis and scientific management.

a) The personnel archives information management system of universities comprehensively collects big data through multiple channels and establishes "big personnel archives data". The large data collected by the information management system of personnel archives in universities covers a wide range and should be collected through multiple channels: firstly, with the help of the digitalization of personnel archives and the information management system of personnel archives, ten basic types of information, such as individual basic information, academic qualifications and titles, political features, work conditions and assessment information, will be collected and become the basic information in the digitalization. Second, through the data interface between the personnel archives information management system and the collection terminal and the management subsystem of relevant departments in the school, it automatically collects the attendance, performance and other information generated in real time and recorded in the daily work of the teaching staff, as well as the relevant authoritative information such as salary, teaching, scientific research, management, social service and other achievements mastered by the management process of functional departments, continuing education and training. Third, the staff members fill in their own other information in the personnel archives information management system, such as personality, hobbies, specialties, health status, social relations, family background, etc. Fourthly, through the data interface between personnel archives information management system and Internet, it automatically collects external environment data (including natural environment, social environment, supply and demand situation of talent market, vertical and horizontal comparison of salary level of each post, etc.), Social networks information reflecting my true intention, credit and law-abiding records and other relevant information. These data reflect the overall picture of teaching staff in an all-round way and provide a solid data foundation for quantitative and scientific management of human resources.

b) Explore the correlation between human resources and posts through big data resources and big data technology of university personnel archives information management system, and realize accurate matching of personnel and posts. Firstly, through the personnel archives information management system of universities, collect the information and individual characteristics of excellent teaching staff in teaching, scientific research, student education and management, and apply relevant algorithms to establish the excellent talent model of this position. Second, according to the excellent talent model of each post, combined with the differences in the work content and responsibilities of each post, select the staff with the highest degree of matching between professional structure, work ability, personality characteristics and post requirements to achieve accurate matching. While effectively carrying out their work, they should give full play to their personal potential and make the best use of their talents. Thirdly, for the selection of personnel for the post to be recruited, on the basis of obtaining the resume information of the applicant, other aspects of information of the applicant are comprehensively obtained through the big data of the Internet, including living conditions, social relations, three views, interests and hobbies, personality, willingness and ability of team cooperation, etc., so as to form three-dimensional information about the applicant. Screening is carried out through the matching

degree between the excellent talent model of the post and the candidate, so as to avoid the influence of the interviewer on the recruitment due to information asymmetry, and realize the accurate matching of personnel and posts.

c) Real-time and comprehensive information collected through multiple channels of university personnel archives information management system to realize objective, fair and quantifiable performance appraisal and provide highly customized incentive measures. First, through docking with various subsystems of internal management of universities, daily work data such as teaching, scientific research, management and student education are automatically collected, including attendance data, specific work tasks, complexity of work tasks, efficiency of completing work tasks, etc. These data are various real-time data faithfully recording daily work, which can realize comprehensive quantification of performance appraisal and fair, objective and accurate appraisal results. It truly reflects the heavy complexity and completion of annual work tasks, reflects the fairness and objectivity of assessment, and avoids unfair phenomena caused by human factors to the greatest extent. Second, the assessment results are directly linked to salaries. Cloud computing technology is used to automatically calculate salary levels, truly realize distribution according to work, reward diligence and punish laziness, overcome egalitarianism, fully mobilize the enthusiasm of teaching staff, and encourage teaching staff to make greater contributions. Third, according to Maslow's hierarchy of needs, human needs are divided into physiological needs, security needs, social needs, respect needs and self-fulfillment needs according to the hierarchy from low to high. Through the analysis of "large personnel archives data", we can understand the different stages and individual needs of the career development of teaching staff, and adopt diversified incentive means to encourage them in different categories, such as improving treatment or welfare for those with material needs, giving full respect and trust to teaching staff for those with respect needs, establishing a stable psychological contract on the basis of signing employment contracts, and generating a sense of belonging; For those who need self-realization, they should not only be motivated by material incentives, but should be motivated by giving due consideration to their professional achievements and promotion in their positions, and highly customized incentive measures should be taken to effectively stimulate talents.

d) Provide highly customized training through the analysis of "large personnel archives data" through the university personnel archives information management system. First, through online ability assessment, combined with performance appraisal results and basic information of individual human resources, understand the training needs of teaching staff, comprehensively analyze relevant data, find out the correlation between the needs of universities in discipline development direction, scientific research, teaching, student management and other aspects and the training needs of teaching staff, customize personalized training plans, and carry out targeted training work. Second, in combination with the requirements of various posts for knowledge updating and business skills, customize professional training for relevant personnel of various posts, realize high customization of training, maximize the acceptability and effect of training, and promote efficient development of training work.

e) With the help of big data technology, analyze the "large personnel archives data" through the university personnel archives information management system, predict the development trend of university human resources, reasonably plan, and maintain the stability of high-level talents to the maximum extent. First, by comprehensively grasping the structure of all kinds of existing

teachers in universities, combining environmental data (mainly macro data such as economic and social development and industrial structure adjustment), using big data technology to analyze, make forward-looking prediction on the development trend of human resources in universities in the future, provide decision-making basis, formulate scientific and reasonable medium-and long-term teacher introduction plan, and implement the annual teacher recruitment plan accordingly. For the majors that conform to the economic and social development and conform to the adjustment of industrial structure, even if they are not popular majors at present, they should be developed ahead of schedule and high-quality teachers and senior talents should be vigorously introduced; On the contrary, even if they are popular majors at present, but will soon decline, they should not be introduced blindly from a long-term perspective, but can be solved by temporary employment, so as to prevent the personnel burden caused by the decline of majors in the future. Second, through the big data analysis of the information of the resigned faculty, find out the influencing factors of their resignation, and put forward targeted countermeasures in daily management. At the same time, with the help of big data, focus on the key teaching staff who may have the tendency to leave, especially the high-level talents, try to eliminate the influencing factors of resignation, ensure the stability of human resources, especially the high-level talents and teams, strive for more scientific research projects and funds for universities, promote discipline progress and technological innovation, and improve the tangible assets and intangible assets of the school. In the era of big data,"big personnel archives information" is collected through the university personnel archives information management system. With the help of big data technology, a large amount of fragmentary data is quickly analyzed quantitatively. The trend of human resources planning and development in universities is predicted prospectively and accurately. Scientific management of human resources in universities based on digital quantitative analysis is realized. It provides a basis for formulating human resources management decisions that conform to future development trends, and better employs, manages people, Encourage people, stabilize high-level talents and teams, and make contributions to better promoting universities in personnel training, scientific research and serving the society.

5.Conclusion

This paper discussed the construction of personnel archives informationization under big data thinking, in order to solve the dilemma faced by human resource management in universities: using big data technology to achieve accurate matching of people and positions, quantitative assessment, highly customized training incentives, human resource planning in line with development trends, and stable high-level talent, to promote the development and progress of various undertakings in universities.

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