

DECISION MAKING MODEL FOR CHINESE UNIVERSITIES HUMAN
RESOURCE MANAGEMENT IN SICHUAN

DENG XIN

A thesis submitted in partial fulfillment of the requirements for Doctor
of Philosophy Program in Digital Technology Management for Education

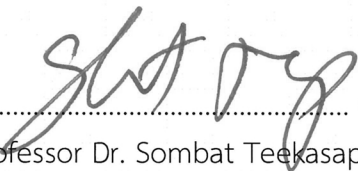
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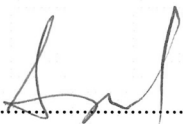

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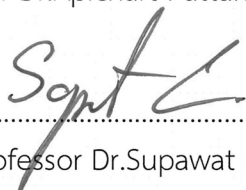
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ABSTRACT

The research purpose is to develop a decision making model for Chinese universities human resource management in Sichuan to improve management practices. It has three specific objectives: Firstly, to study current problems and resolutions for Chinese universities human resource management system. Secondly, to develop a decision making model for Chinese universities human resource management in Sichuan. Thirdly, to evaluate the the decision making model for Chinese universities human resource management in Sichuan. To achieve Objective 1, the literature review method and expert survey method were used, a questionnaire for the expert survey was designed based on the results of the literature review and was implemented after confirmation by 5 experts, the questionnaire was then administered to 21 experts to further verify the results of the literature review. To achieve Objective 2, Delphi method was used in combination with feedback from 21 experts to establish a graphical model. To achieve Objective 3, 9 experts evaluated the designed university human resource management decision support system model according to the CIPP evaluation principles.

The results were found that:

Firstly, the current problems of human resource management system are the data management organization and policy standards need to be unified; the application of big data technology needs to be strengthened; the application of

information technology needs to be deepened; Database technology needs to be improved; and the application of artificial intelligence technology needs to be enhanced. Through data statistics and analysis, 42 resolutions and 18 influencing factors were identified.

Secondly, constructing a decision support system model for university human resource management, six core subjects were identified: “Personnel Information Management”, “Personnel Recruitment Management”, “Personnel Development Management”, “Performance Assessment Management”, “Internal Promotion Management”, and “Compensation and Benefits Management”. Each subject has 3 influencing factors. This research mainly explores the interrelationships between various subjects and the impact of each influencing factor on the respective subject.

Thirdly, the evaluation of the decision support system model for university human resource management was unanimously affirmed and recognized by participating experts.

Keywords: university Human Resource Management, Decision Making model, digital technology management

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Chapter 1

Introduction

Rationale

In an era marked by the rise of digital technology and artificial intelligence, the widespread adoption of government policies and digital tools is accelerating the digital transformation of university management in China. One of the primary driving forces behind this transformation is the integration of information technology into human resource management processes, aimed at enhancing efficiency and decision-making capabilities. The digital transformation of Chinese universities is part of the broader trend towards smart education systems, which emphasize the use of big data and artificial intelligence to optimize educational and administrative functions. This trend is supported by national initiatives that encourage the adoption of digital technologies in higher education to boost competitiveness and innovation (Xia, J., et al. 2023). Therefore, integrating advanced digital technologies into university human resource management is a significant trend for improving management effectiveness.

However, universities face major obstacles, including data security, privacy issues, and the need for employee training to effectively use new technologies. Additionally, there is a need for a cultural shift within institutions to embrace digital transformation and create an environment conducive to innovation. The transition to digital human resource management is also impacted by challenges arising from traditional HR practices, such as manual data processing and limited information access, which can hinder the responsiveness and adaptability of university HR departments (Yuan, Y., et al. 2015). These significant challenges greatly impede the progress of digital transformation in human resource management in Chinese universities.

Integrating digital technologies like artificial intelligence (AI) and big data into university human resource management (HRM) offers multiple benefits, including enhanced efficiency, decision-making, and strategic planning. AI-driven tools can

personalize the employee experience, thereby improving job satisfaction and retention rates. Big data analytics can assist HR departments in forecasting future trends and challenges. Furthermore, AI and big data can improve HR management decision-making processes by providing data-driven insights, thereby reducing the time and biases associated with manual processes (Hu, L., et al. 2023).

Research Question

How to apply a decision making model to address the challenges faced by Chinese universities human resource management in Sichuan and provide them with more intelligent, efficient, and innovative management methods?

Objectives

1. To study current problems and resolutions for Chinese university human resource management system.
2. To develop a decision making model for university human resource management in Sichuan.
3. To evaluate the decision making model for university human resource management.

Scope of the Research

Based on the complexity of human resource management in Chinese universities and the research goal of improving the efficiency and scientificity of management, the scope of this research mainly focuses on the 6 core contents of human resource management in Chinese universities: Personnel Information Management, Personnel Recruitment Management, Personnel Development Management, Performance Assessment Management, Internal Promotion Management, and Compensation and Benefits Management.

Objective 1: Study current problems and resolutions for Chinese university human resource management system

Population:

1. Chinese university human resource managers in Sichuan: These individuals are responsible for handling various specific tasks related to human resource management in Chinese universities and are the primary users of university human resource management systems.

2. Information technology professionals in Sichuan: These individuals possess expertise and skills in the field of information technology, including solving IT issues, developing software applications, managing networks and systems, maintaining hardware equipment, and conducting data analysis.

3. Chinese university information technology managers or university administrators in Sichuan: These individuals are specifically involved in higher education's information technology development and educational management, playing a decisive role in the digital transformation of university administration.

The sample Groups: Target sampling method applied.

1. 7 Chinese university human resource managers in Sichuan.
2. 7 information technology professionals in Sichuan.
3. 7 Chinese university information technology managers or university administrators in Sichuan.

The Guideline:

1. Personnel Information Management
2. Personnel Recruitment Management
3. Personnel Development Management
4. Performance Assessment Management
5. Internal Promotion Management
6. Compensation and Benefits Management

Objective 2: Develop a decision making model for university human resource management in Sichuan

Population:

1. Chinese university human resource managers in Sichuan: These individuals are responsible for handling various specific tasks related to human resource management in Chinese universities and are the primary users of university human resource management systems.

2. Information technology professionals in Sichuan: These individuals possess expertise and skills in the field of information technology, including solving IT issues, developing software applications, managing networks and systems, maintaining hardware equipment, and conducting data analysis.

3. Chinese university information technology managers or university administrators in Sichuan: These individuals are specifically involved in higher education's information technology development and educational management, playing a decisive role in the digital transformation of university administration.

The sample Groups: Target sampling method applied.

1. 7 Chinese university human resource managers in Sichuan.
2. 7 information technology professionals in Sichuan.
3. 7 Chinese university information technology managers or university administrators in Sichuan.

The Guideline:

1. Complete data storage
2. Accurate data recording
3. Smooth data sharing
4. Intelligent recruitment strategies
5. Automated recruitment process implementation
6. Intelligent candidate matching and screening
7. Identification of training needs
8. Personalized development of training plans
9. Reasonable allocation of resources

10. Intelligent performance assessment
11. In-depth analysis of performance data
12. Sound feedback mechanism
13. Unified hiring criteria
14. Intelligent job matching
15. Clear promotion channels
16. Intelligent analysis of compensation and benefits
17. Personalized incentive measures
18. Intelligent policy analysis

Objective 3: Evaluate the decision making model for university human resource management

Population:

1. Chinese university human resource managers in Sichuan: These individuals are responsible for handling various specific tasks related to human resource management in Chinese universities and are the primary users of university human resource management systems.

2. Information technology professionals in Sichuan: These individuals possess expertise and skills in the field of information technology, including solving IT issues, developing software applications, managing networks and systems, maintaining hardware equipment, and conducting data analysis.

3. Chinese university information technology managers or university administrators in Sichuan: These individuals are specifically involved in higher education's information technology development and educational management, playing a decisive role in the digital transformation of university administration.

In order to evaluate the effectiveness of the decision support system for human resource management in Chinese universities developed in this research, the population for this phase of the research should be the same category of personnel as in the previous two phases, but the sample group in this phase should be people with higher levels of expertise and richer experience than the sample groups in the

previous two phases. Since there are significantly fewer people eligible for the sample than in the previous two phases, the sample group in this phase can be appropriately reduced and the purpose of the research can also be achieved.

The sample Groups: Target sampling method applied.

1. 3 Chinese university human resource managers in Sichuan.
2. 3 information technology professionals in Sichuan.
3. 3 Chinese university information technology managers or university administrators in Sichuan.

Independent Variables:

The same as objective 1 and objective 2.

Dependent Variables:

Effectiveness of Model Implementation

Time

The research time of the researcher is from September 2023 to July 2024.

Advantages

This research will bring several advantages to the field of university human resource management, including innovation, personalized management, data-driven decision-making, efficiency enhancement, employee performance improvement, and data security and compliance. These advantages will contribute to better addressing management challenges and improving overall competitiveness in universities.

1. Innovation and Forward-Thinking:

The research explores the application of decision support system in university human resource management, which is an innovative and forward-thinking research area. With the rapid advancement of decision support system, its application in university management is a future trend, and this research will provide new insights and methods for university administration.

2. Personalized Management:

The research focuses on the application of personalized management strategies, which helps better meet the needs of employees, thereby increasing

employee satisfaction, loyalty, and motivation. This will aid universities in attracting and retaining outstanding faculty and staff.

3. Data-Driven Decision-Making:

The research emphasizes the role of data analysis and machine learning in university decision-making, which enhances the objectivity and accuracy of decisions. By better utilizing data, universities can make more informed resource planning, policy formulation, and future demand predictions.

4. Enhancing Management Efficiency:

The research aims to improve management efficiency in universities, including aspects such as recruitment, training, performance evaluation, and benefits management. Automation of processes and the provision of intelligent recommendations will significantly enhance management efficiency, reducing time and resource wastage.

5. Improving Employee Performance:

The research focuses on how to improve employee performance through performance evaluation and incentive mechanisms. This will help universities better identify and reward outstanding performance, thereby raising overall performance levels.

6. Data Security and Compliance:

The research will address privacy and security issues concerning employee data, ensuring compliance with relevant regulations and safeguards for employees' personal data when introducing decision support system.

Definition of Terms

1. Human Resource Management Decision Support System (HRM-DSS):

Human Resource Management Decision Support System refers to the use of computers and information technology to integrate, analyze, and process data, information, and knowledge related to human resources, providing intelligent support and assistance for human resource management decisions to optimize an organization's human resource operations and management processes. The primary

goal of HRM-DSS is to assist managers and decision-makers in making more informed, data-driven human resource decisions to maximize the effectiveness of human resources, enhance employee satisfaction, and improve overall organizational performance. The HRM-DSS referred to in this study is tailored for human resource management in Chinese universities and should be designed in accordance with the realities of Chinese university human resource management and university management policies.

2. Human Resource Management Decision Support System Models (HRM-DSS model):

Human Resource Management Decision Support System models should encompass various areas of human resource management, including personnel information management, recruitment management, personnel development management, performance appraisal management, internal promotion management, compensation and benefits management, and more. The aim of Human Resource Management Decision Support System models is to enhance efficiency, accuracy, and decision support through the application of digital technology. These models leverage technologies such as artificial intelligence and big data to automate workflow processes, reducing manual errors and improving work efficiency. Additionally, they can analyze and assess relevant data, providing recommendations to decision-makers, enabling them to make more informed decisions.

3. Personnel Information Management:

Personnel Information Management refers to the process of collecting, storing, maintaining, and managing personal and professional information of employees. It includes basic employee data, salary information, work history, performance evaluations, training records, contracts, and other relevant information. In practical work, HR managers often need to statistically analyze and interpret personnel information based on specific needs to support HR decision-making and management.

4. Personnel Recruitment Management:

Personnel recruitment management involves a series of activities and processes to determine personnel needs, post job advertisements, attract, assess, and select suitable candidates, and ultimately hire new employees. It encompasses creating demand plans and recruitment strategies, candidate assessments, conducting background and comprehensive investigations, and all steps related to recruitment activities.

5. Personnel Development Management:

Personnel development management consists of a range of strategies and activities implemented by organizations to enhance employees' skills, knowledge, and performance. It includes identifying training needs, creating training plans, organizing training courses, evaluating training effectiveness, and tracking employee development and progress. In academia, the effectiveness of personnel development management is often reflected through promotions to professional and technical positions, so this research also includes relevant content related to such promotions.

6. Performance Assessment Management:

Performance assessment management refers to a systematic process for assessing employee work performance. It includes setting performance standards, regular work evaluations, providing feedback, setting goals, and recognizing and rewarding employees with outstanding performance, or providing improvement plans to help employees enhance their performance.

7. Internal Promotion Management:

Internal Promotion Management involves the process of managing job positions, roles, or responsibilities within an organization. It includes determining position requirements, creating job descriptions, posting job advertisements, selecting suitable candidates, and managing job assignments and role changes.

8. Compensation and Benefits Management:

Compensation and benefits management encompass a series of activities related to managing employee compensation and benefits. It includes developing

and administering compensation systems, calculating wages, managing benefit plans (such as health insurance, retirement plans, and leaves), addressing wage issues, and administering employee compensation. This field also includes the design and implementation of employee reward and incentive systems.

Research Framework

The framework of this research aims to improve the practice of human resource management in Chinese universities by conducting an in-depth analysis and designing an effective digital technology-based Human Resource Management Decision Support system model. The input data for this research includes relevant data from existing human resource management system development and feedback from stakeholders. This research will begin by identifying the core issues faced by university human resource management systems through expert surveys and the Delphi method. Corresponding digital technology based solutions will be proposed. Subsequently, the researchers will optimize this human resource management decision support system model, integrating various solutions, best practices, and industry trends. Expert interviews will be conducted using the CIPP evaluation model to assess the designed model, ensuring its widespread applicability in Chinese universities. During the implementation phase, researchers will actively collect user feedback and make necessary adjustments and improvements to the model based on practical applications.

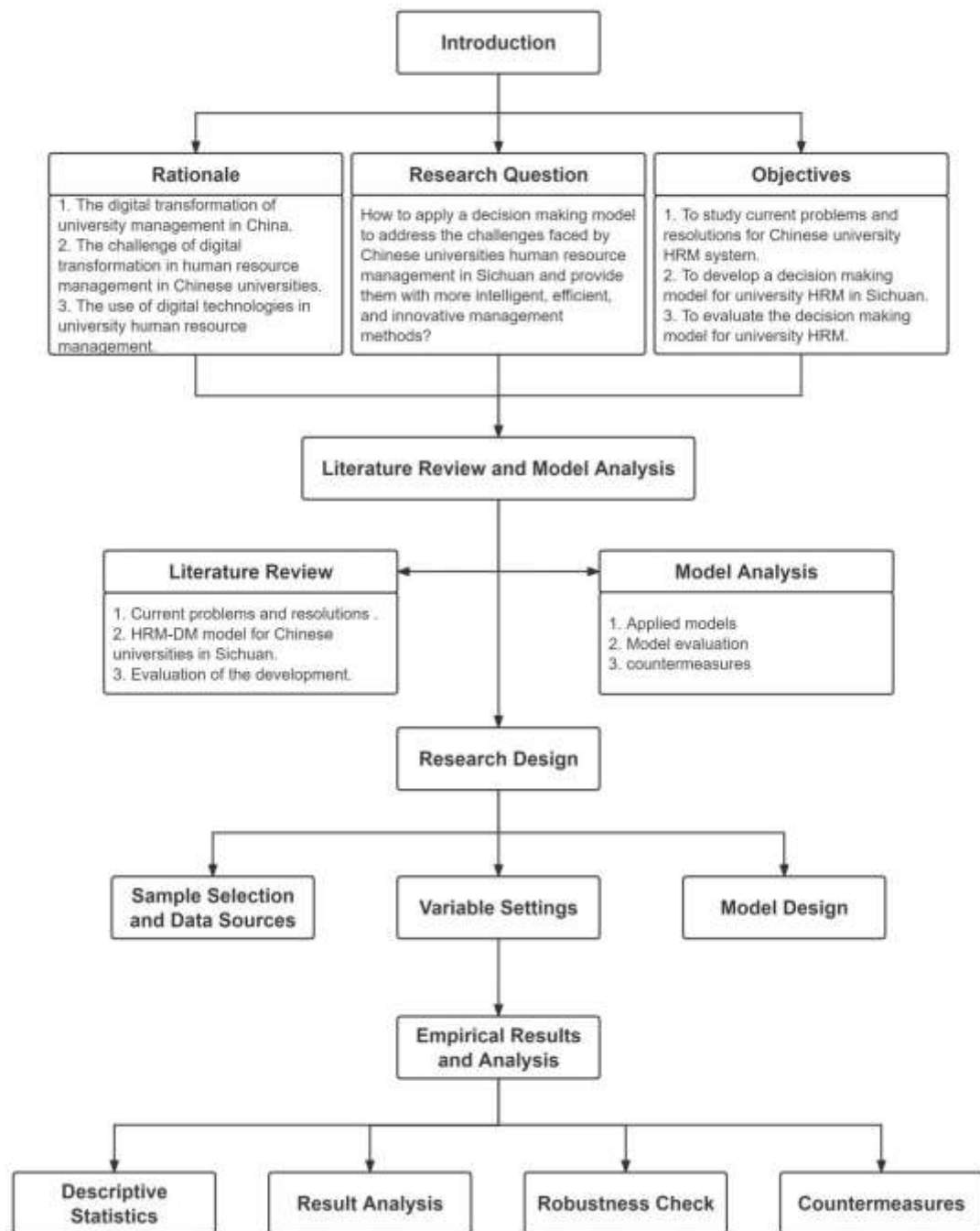


Figure 1.1 Research Framework

Chapter 2

Literature Review

This review article synthesizes key insights from a substantial body of academic works that delve deeply into the current problems and potential resolutions in Chinese university human resource management systems. By connecting the perspectives of these scholars, this review provides valuable insights and strong theoretical support for the design and construction of an digital technology supported human resource management decision making model in Chinese universities. This not only holds significant academic value but also carries vital implications for innovation and improvement in management strategies within Chinese universities, enhancing and optimizing human resource management efficiency, facilitating data-driven decision-making, and ensuring the long-term sustainability and success of higher education institutions. This chapter primarily discusses the following aspects:

1. Current problems existing in university human resource management system.
2. Resolutions to improve university human resource management.
3. Factors influencing university human resource management.
4. Theoretical basis for designing Human Resource Management decision making model.
5. Design and evaluation methods of decision making model for human resource management.

The details are as follows.

Current problems existing in university human resource management system

The development background of human resource management in universities can be traced back to the continuous deepening of higher education reform and the acceleration of globalization. Over the past few decades, Chinese higher education has transformed from elite education to mass education, with rapid expansion in the scale of universities and a significant increase in the demand for faculty. During this process, the role of human resource management in universities has become increasingly important. In the era of the knowledge economy and information technology, universities are not only responsible for education and research but also face the pressure of global talent competition. To enhance international competitiveness, many universities have started to focus on the construction and optimization of human resource management systems to achieve scientific management and effective utilization of human resources.

At the same time, national policies have provided strong support for the development of human resource management in universities. For example, policy documents such as the "Implementation Opinions on Deepening the Reform of the Personnel System in Higher Education Institutions" have promoted innovation and reform in human resource management within universities. Universities have gradually introduced advanced management concepts and technical means, such as information management systems, performance evaluation systems, and talent development plans, to improve management efficiency and service levels.

However, with changes in the external environment and increasing internal demands, the challenges faced by human resource management in universities have also increased. Universities need to continuously adapt to new management models and methods, enhance the professional quality and management level of management personnel, and meet the increasingly complex needs of human resource management. In this context, researching and addressing the current problems in university human resource management is particularly important.

1. The data management organization and policy standards need to be unified

To unify the data management organization and policy standards for human resource management in Chinese universities is a significant challenge that hinders the development and sustainability of private medical institutions in the country (Lyu, Hui, et al., 2016). The absence of a cohesive approach to human resource management in the education sector, as highlighted in further education middle management, can lead to inefficiencies and inconsistencies in the implementation of policies and practices (Corbett, S. 2020). Additionally, the lack of government policy focus on data collection and management, particularly in developing countries, poses challenges for the integration of water resource management and sustainable livelihood initiatives (Adji, Tjahyo Nugroho., et al., 2024). The need for improved institutional opening-up based on rules, regulations, management, and standards is emphasized in the 14th Five-Year Plan for National Development. Furthermore, the importance of standardizing the collection, management, and use of data resources is highlighted in the context of national informatization.

The lack of unified standards and formats for personnel information storage poses several challenges, including inefficiencies in data integration and control, as highlighted in the research papers. A personnel information standardized collection system addresses this by integrating hardware and software for efficient collection of various data types (Ji, Qiangsheng., et al. 2017). Additionally, a virtual storage system for personnel information bases enhances data integration and management efficiency across different regions (Gao, Jianqiang, et al. 2015).

Incomplete recruitment information data significantly impacts decision-making processes, as highlighted in various studies. The simulation studies conducted by Feigh et al. and Canellas et al. emphasize the importance of understanding decision strategies under conditions of incomplete information, showing that psychological heuristics can outperform normative-rational methods in accuracy and effort efficiency (Feigh, Karen M. et al. 2014) (Canellas, Marc C., et al. 2014).

The lack of information standards in staff training within human resource management can have significant repercussions on organizational effectiveness and employee development. Research has shown that inadequate human resources can lead to incomplete documentation, insufficient information sharing, and errors in information storage and distribution, ultimately affecting patient safety and an organization's corporate image (Ikonen, Heli., et al. 2022).

The lack of a unified data management organization and policy standards for human resource management performance evaluation can lead to various inefficiencies and challenges in assessing and improving employee performance. This issue can result in problems such as immature evaluation systems, lack of motivation, and ineffective performance management models, as highlighted in different research papers (Wei, Fei. 2022). Without standardized data management practices, organizations may struggle to measure the impact of HR initiatives accurately, impacting the overall efficiency of human resource management in both public and private sectors (Wei, Yifang. 2018).

The absence of unified data management organization and policy standards can significantly impact employment management in human resource positions. Without proper policies in place, organizations may face risks such as using outdated devices and failing to meet customer requirements, leading to financial losses and decreased trust (Al Abdullatif, Asayel., et al. 2018). Misalignment between HRM policies and practices can result in negative outcomes, with soft policies overshadowing actual practices, affecting organizational and employee well-being (Gill, Carol., et al. 2011). Globalization pressures emphasize the need for effective HRM initiatives, including employee involvement in change management and skill alignment with market demands, all of which are influenced by data quality and management standards (Jain, Ashish. 2015).

The lack of unified data management organization and policy standards in human resource management compensation and benefits management can lead to various negative consequences. It can result in inefficient resource allocation, causing resource fragmentation and impacting data center and application performance

(Mishra, Mayank., et al. 2017). Inadequate human resources can lead to failures in managing patient information, contributing to incomplete documentation and information sharing issues in healthcare settings, ultimately harming an organization's corporate image.

2. The application of big data technology needs to be strengthened

The application of big data technology needs to be strengthened stems from the traditional models' inability to meet the demands of the digital era (Ma, Jin-Qiang. 2023) (Liu, Tao. 2020). While big data offers the potential to revolutionize human resource management by providing valuable insights for decision-making and talent development strategies (Zeng, Jiayi. 2021), its full potential remains underutilized. The existing frameworks often lack the adaptation needed to leverage big data effectively, resulting in missed opportunities for enhancing performance management, decision-making accuracy, and overall competitiveness of enterprises (Xu, Dazhi., et al. 2022). The subjective nature of current human resource performance management methods and the insufficient integration of big data analytics further hinder the optimization of human resource processes and the realization of data-driven decision-making in organizations (Li, Kun-fa., et al. 2019).

The application of big data technology needs to be strengthened in personnel information management of human resource management is evident in the lack of integration of big data analysis methods into HR management processes. While modern enterprises commonly use data mining in HR management, there is a gap in incorporating big data analysis techniques effectively. This gap results in a subjective approach to HR performance management, lacking objective data understanding and underutilizing the theoretical framework of big data in HR management (Li, Kun-fa., et al. 2019).

The application of big data technology needs to be strengthened in recruitment management within human resource management is reflected in various ways. Studies highlight a lack of utilization of 4.0 technologies and big data analytics in employee and labor market relations, indicating sectoral differences in adoption

and pointing out obstacles like short-term perspectives, data quality issues, and a lack of analytics skills (Conte, Francesca., et al. 2023).

The application of big data technology needs to be strengthened in employee training management within human resource management lies in the ethical implications and privacy concerns associated with data analytics. While big data offers significant value in enhancing organizational efficiency and talent development (Zeng, Jiayi. 2021), there are risks of compromising employee identity through institutional surveillance and algorithmic data manipulation, leading to ethical challenges and potential mistrust in the management-employee relationship. Moreover, the traditional performance management concepts may not align with the current data-driven era, necessitating innovative approaches like employee similarity recognition frameworks and refined workload assessments to maximize human resource advantages and promote sustainable enterprise development (Xu, Dazhi., et al. 2022).

The application of big data technology needs to be strengthened in the performance evaluation management of human resource management is reflected in various ways. Traditional performance appraisal methods are often subjective, lack intelligence, and fail to fully utilize the achievements of performance management (Zhao, Peipei. 2022). Additionally, the traditional performance management concepts and methods do not align with the requirements of the current era, resulting in various drawbacks and limitations in adapting to the development needs of modern enterprises (Xu, Dazhi., et al. 2022).

The insufficient application of big data in human resource management (HRM) employment management reflects a missed opportunity for organizations to enhance workforce efficiency and decision-making processes. Research highlights the ethical implications of big data analytics in HRM practices, emphasizing the risks of compromising employee identity and violating ethical standards. Additionally, studies point out the lack of adoption of 4.0 technologies and big data analytics in employee and labor market relations, hindering the development of HR analytics due to data quality issues and skills gaps (Conte, Francesca., et al. 2023).

The application of big data technology needs to be strengthened in compensation and benefit management within human resource management can lead to various manifestations. The traditional performance management concepts and methods may not align with the current development requirements, resulting in drawbacks (Xu, Dazhi., et al. 2022). The lack of objective data understanding and underutilization of big data in human resource performance management can hinder the effectiveness of compensation strategies (Li, Kun-fa., et al. 2019).

3. The application of information technology needs to be deepened

The insufficient application of information technology in human resource management can lead to various challenges across different sectors. In healthcare settings, a lack of human resources can result in incomplete documentation, inadequate information sharing, and errors in information storage and distribution, ultimately affecting patient safety and damaging the organization's corporate image (Ikonen, Heli., et al. 2022). Similarly, in South African public enterprises, the inability to fully utilize technology in HRM operations is attributed to a lack of digital training and slow responsiveness to environmental changes due to bureaucratic structures, highlighting the importance of extensive employee digital training and effective internal digital systems for organizational effectiveness (Muzanenhamo, A. 2023). Furthermore, the success of enterprises hinges on efficient human capital management, emphasizing the necessity for continuous improvement of employees through the application of IT solutions to remain competitive in the market (Olszewski, J., et al. 2017). The emergence of Human Resource Management Information Systems (HRMS) in the context of innovation and entrepreneurship underscores the significance of leveraging new technologies for talent acquisition, development, and retention, indicating a shift towards more advanced HR management practices (Hao, Y. 2020).

The insufficient depth of information technology application in human resource management personnel information management is reflected in various ways. Traditional manual methods lead to inefficiencies and errors in personnel file management (Wang, T. 2021). The lack of systematic and wise application of IT in

HRM functions is evident, despite its wide usage in organizations, impacting recruitment, maintenance, and development tasks (Kaur, M., et al. 2014).

Insufficient application of information technology in recruitment management of human resource management hinders organizational development and competitiveness. Research indicates that while IT is widely used in HRM functions, including recruitment, in India's dynamic economy (Kaur, M., et al. 2014), many organizations struggle with the systematic and wise application of these technologies, impacting the efficiency and effectiveness of human capital management. Moreover, in the electronic technology industry, inadequate understanding of recruitment methods and systems impedes long-term enterprise growth (Li, Xiaoyuan., et al. 2020).

Insufficient application of information technology in employee training management within human resource management reflects various challenges faced by organizations. Studies highlight that public enterprises in South Africa struggle with digitalization in HRM due to a lack of in-house digital training and slow response to environmental changes, hindering organizational effectiveness (Muzanenhamo, A. 2023). The success of enterprises heavily relies on efficient human capital management supported by IT solutions, yet practical implementation remains inadequate, impacting competitiveness and survival in tough economic times (Olszewski, J., et al. 2017).

The insufficient application of information technology in performance evaluation management within human resource management (HRM) leads to various challenges. Studies highlight the lack of systematic and quantitative approaches in employee performance evaluation, resulting in issues such as incomplete information, subjective metrics, and difficulty in assessing performance (Kalhori, M., et al. 2017). Additionally, the manual methods used for employee performance evaluation contribute to slow and inaccurate processes, with evaluations remaining highly subjective (Nurhayati, S. 2019).

The insufficient application of information technology in human resource management (HRM) employment management reflects various challenges faced by organizations. Studies highlight that many HRM departments do not fully utilize technology due to a lack of in-house digital training and slow responses to environmental changes, leading to inefficiencies in HR processes (Muzanenhano, A. 2023). This inadequacy inhibits effective planning, control, and management of HR costs, impacting decision-making quality and employee productivity (Saxena, V., et al. 2017).

The insufficient application of information technology (IT) in human resource management (HRM) impacts various areas, including compensation and benefit management. Research shows that while IT systems can offer benefits like cost reduction and time savings in HRM (Zisiadis, M. 2015), many organizations still struggle to fully utilize IT tools for employee development (Olszewski, J., et al. 2017). In the context of compensation and benefits, the lack of IT integration can lead to challenges in payroll and benefits administration, potentially hindering efficient processes and decision-making in HRM (Jonathan, P., et al. 2001).

4. Database technology needs to be improved

Database technology needs to be improved in human resource management is manifested in various ways, such as the limited computerization of HR functions using traditional database systems (Khoong, C. M. 1994). This limitation hinders the utilization of advanced computer technologies available in the '90s, even in large organizations with sophisticated systems in other areas. Additionally, the presence of replicated and inconsistent data in HR decision-making processes necessitates the use of multi-criteria methods like Rough Set Theory to rationalize decision-making and address data inconsistencies (Gaia do Couto, A. B., et al. 2012). Furthermore, the integration of data mining techniques in HR management, particularly in staff allocation processes, highlights the need for advanced models based on employees' competencies and productivity levels to ensure stable task assignments and system stability. These challenges underscore the importance of developing effective knowledge management techniques, like possibilistic logic, to address imperfect

knowledge in reverse engineering environments for legacy systems (Jahnke, J. H., 2002).

Database technology needs to be improved in personnel information management within human resource management is evident in the challenges faced by HR professionals and employees regarding data privacy and technology use (Jeffrey, M., et al. 2003). The distinction between the database schema and extension, crucial for modeling the real world accurately, can become blurred in artificial intelligence, potentially leading to inconsistencies in data representation and interpretation (Zimányi, E., et al. 1997).

The embodiment of Database technology needs to be improved in recruitment management within human resource management is evident in various ways. Online recruiting, as highlighted in (Lin, B., et al. 2002), faces challenges such as accuracy, verifiability, and accountability of data, leading to potential issues for both managers and job candidates. Additionally, the lack of personal touch in online recruitment systems can hinder effective communication between employers and potential employees, as discussed in the same context. Furthermore, the study by (Kubra, Oncu. 2019) emphasizes the importance of combating fraud and improving the hiring process, which can be achieved through Blockchain technologies to ensure secure and transparent document transactions.

Database technology needs to be improved in staff training management of human resource management manifests in various ways, such as the risk of data loss, inefficient training systems, and inadequate analysis capabilities. The use of outdated database structures can lead to difficulties in storing and retrieving crucial training information, hindering the effectiveness of training programs (Zeng, Yue-zheng. 2022). Additionally, inadequate database design can result in low data sharing, high redundancy, and security vulnerabilities, impacting the overall reliability of the system (Dong, X. 2016).

Database technology needs to be improved manifests in the performance evaluation management of human resource management through the utilization of data mining techniques like fuzzy data mining and chaotic optimization algorithms

(Wei, Fei. 2022). These methods aim to enhance the precision and stability of performance evaluation models by addressing flaws in the original evaluation criteria and generating more accurate initial values for data analysis (Wang, H. 2022). Additionally, the application of data warehouse technologies in university human resource management involves reducing and categorizing features to evaluate teachers' research abilities, contributing to better decision-making processes (Zhang, D.-P. 2009).

The embodiment of Database technology needs to be improved in the employment management of human resource management is evident in the challenges posed by imprecise, incoherent, and contradictory data in industrial databases (Kochanski, A., et al. 2012). Despite efforts to minimize errors during data collection, industrial databases often lack crucial information, leading to inaccuracies in analyses and hypotheses. This imperfection hinders the effective integration of big data analysis methods into HR management processes, limiting the ability to efficiently monitor employees' performance and allocate tasks based on their professional skills and preferences. The technology gap in human resource management further exacerbates this issue, as organizations primarily rely on traditional database management systems that do not leverage advancements in computer technology (Khoong, C. M. 1994).

The embodiment of Database technology needs to be improved in compensation and benefit management within human resource management is evident in the limited computerization of HR functions, even in large organizations with advanced computer systems in other areas (Kochanski, A., et al. 2012). To address this gap, there is a call for digital transformation practices leveraging human resource data analysis methods to achieve accurate, scientific, and standardized management of core enterprise affairs. This includes the design of data statistical analysis subsystems and human resource management system architectures based on data analysis models to analyze employee salaries and optimize compensation structures (Deng, H., et al. 2022).

5. The application of artificial intelligence technology needs to be enhanced

Insufficient application of artificial intelligence (AI) in human resource management (HRM) can lead to various performance issues. The lack of AI utilization may result in time-consuming candidate selection processes, ineffective hiring decisions, and increased workload for HR managers (Ammer, M. A., et al. 2023). Additionally, without AI optimization algorithms like Nadam, the accuracy of models such as the salary prediction model may be compromised, impacting the efficiency of predicting candidates' salaries based on resume content (Yu, J. 2022). Furthermore, the absence of AI integration in HR practices can hinder talent acquisition, performance assessment, and overall HR operations, affecting organizational performance and competitiveness (Tiwari, P., et al. 2021). Insufficient AI implementation in digital HRM systems can also pose risks, as existing tools may not effectively manage operational risks, necessitating innovative AI-based risk prediction models for stability and accuracy. Overall, the inadequate use of AI in HRM may impede recruitment, performance evaluations, training, and career management, limiting the enhancement of applicant and employee experiences and hindering strategic HR functions.

The insufficient application of artificial intelligence (AI) technology in personnel information management within human resource management leads to challenges such as semi-automated or fully manual staffing processes, primarily focusing on report management, personnel data, and salary administration (Li, C. 2022). This limited integration of AI results in suboptimal human resource management practices, hindering the full potential of employees and failing to maximize enterprise interests (El-Deiry, W. S. 2022).

The insufficient application of artificial intelligence (AI) technology in recruitment management within human resource management can lead to various performance issues. Research has shown that AI systems can significantly increase efficiency, reduce worktime, and cut labor costs in the recruitment process (Aydin, E., et al. 2023). However, the lack of proper regulation and oversight in the use of AI

systems for recruitment can result in potential discrimination issues, as these systems may lack the human factor necessary to mitigate bias and errors in candidate selection (Mariani, K. 2023).

Insufficient application of artificial intelligence (AI) technology in personnel training management within human resource management can lead to various performance issues. Research indicates that AI tools are increasingly crucial in personnel management, including training and development (Volodina, O. 2022). Neglecting the implementation of AI in training can result in missed opportunities for enhancing employee quality, performance assessment, and development aligned with industry needs (Sarkar, P. 2023).

Insufficient application of artificial intelligence (AI) technology in performance evaluation management within human resource management (HRM) can lead to various negative impacts. Research indicates that biased AI applications negatively affect performance management, compensation, staffing, and training and development, highlighting the importance of addressing AI bias in HRM (Tuffaha, M. 2023). On the other hand, the adoption of AI in HRM, particularly in recruitment and shortlisting processes, can significantly improve efficiency by automating tasks and enhancing decision-making processes, ultimately leading to better candidate selection based on company culture and preferences (Aydin, E., et al. 2023).

Insufficient application of artificial intelligence (AI) technology in employment management within human resource management (HRM) can lead to various performance issues. Research highlights that biased AI applications negatively impact performance management, compensation, staffing, and training and development, ultimately affecting organizational efficiency (Tuffaha, M. 2023). Additionally, the gap between the promise and reality of AI in HRM poses challenges such as the complexity of HR phenomena, data limitations, ethical concerns, and potential negative employee responses to algorithm-based management decisions.

Insufficient application of artificial intelligence (AI) technology in compensation and benefit management within human resource management (HRM) has been shown to negatively impact performance. Research indicates that biased AI

applications can hinder performance management, compensation, staffing, and training and development processes (Tuffaha, M. 2023). Additionally, the adoption factors of AI in HRM, such as compatibility, relative advantage, and managerial support, play a crucial role in determining the success of AI implementation in various HRM areas, including compensation management (Tuffaha, M. 2022).

The main problems existing in university human resource management system are shown in table 2.1.

Table 2.1 Main problems existing in university human resource management system

Scholar	1	2	3	4	5
Lyu, Hui, et al. (2016)	●		●		●
Corbett, S. (2020)	●		●	●	
Adji, Tjahyo Nugroho., et al. (2024)	●	●		●	
Ma, Jin-Qiang. (2023)	●	●		●	
Liu, Tao. (2020)		●	●		●
Zeng, Jiayi. (2021)	●	●	●	●	
Xu, Dazhi., et al. (2022)		●	●	●	●
Li, Kun-fa., et al. (2019)	●	●			●
Ikonen, Heli., et al. (2022)	●		●	●	●
Muzanenhano, A. (2023)	●	●	●	●	
Olszewski, J., et al. (2017)	●		●		●
Hao, Y. (2020)		●	●	●	
Khoong, C. M. (1994)	●		●	●	
Gaia do Couto, A. B., et al. (2012)	●			●	●
Jahnke, J. H., (2002)		●		●	●
Ammer, M. A., et al. (2023)	●		●	●	●
Yu, J. (2022)		●		●	●
Tiwari, P., et al. (2021)	●		●	●	●
Total	13	10	12	14	11

1. The data management organization and policy standards need to be unified (13)
2. The application of big data technology needs to be strengthened (10)
3. The application of information technology needs to be deepened (12)
4. Database technology needs to be improved (14)
5. The application of artificial intelligence technology needs to be enhanced (11)

Conclusion:

This study will address several key issues to enhance the efficiency and effectiveness of human resource management systems in Chinese universities. Firstly, unifying data management organization and policy standards is crucial. Research has shown that the lack of standardized data management practices leads to inefficiencies and inconsistencies in policy implementation (Lyu et al., 2016; Wei, 2022). Secondly, strengthening the application of big data technology is necessary. Although big data has the potential to support decision-making and optimize talent development strategies, its current application frameworks remain underutilized (Zeng, 2021; Xu et al., 2022). Thirdly, there is a need to deepen the application of information technology. Traditional manual methods and insufficient use of IT hinder data processing efficiency in human resource management (Kaur et al., 2014; Muzanenhano, 2023). Fourthly, improving database technology is essential. Existing database systems face challenges related to data consistency and privacy, necessitating the adoption of more advanced data management technologies (Khoong, 1994; Zeng, 2022). Lastly, enhancing the application of artificial intelligence technology is important. The potential of AI in recruitment, performance evaluation, and employee training has not been fully realized, with issues related to efficiency and bias (Aydin et al., 2023; Tuffaha, 2023). Addressing these issues will provide significant support for improving the overall effectiveness of human resource management systems in Chinese universities.

Resolutions to Improve University Human Resource Management

1. Resolutions to unify the data management organization and policy standards

To unify the data management organization and policy standards in Human Resource Management in universities, several resolutions can be implemented based on the research findings. Firstly, enhancing the informatization awareness of human resource managers and integrating new-generation information technologies like 5G + AI into recruitment processes can improve data management (Feng, Y. 2023). Secondly, designing adaptable university human resource management systems using adaptive computing technology can enhance self-management capabilities and reduce complexity in data management (Ye F., et al. 2014). Additionally, establishing comprehensive HR policies, conducting HR audits, and implementing continuous organizational feedback mechanisms are crucial steps to standardize data management practices and ensure compliance with institutional and national laws and policies (Addo, P. K., et al. 2023). Moreover, developing quality lecturer policies, including structured development programs and knowledge grouping, can further enhance data management and policy standards in university human resource management (Salamah, S. 2022). Lastly, creating a Coordination Council for human resources development and implementing a Center for Personnel Development can provide a structured approach to talent management and policy development, ultimately improving data management practices in universities (Mashoshyna, N., et al. 2021).

2. Resolutions to strengthen the application of big data technology

To enhance the application of Big Data Technology in Human Resource Management in universities, several resolutions can be implemented based on the research papers provided. Firstly, it is crucial to enhance the informatization awareness of human resource managers and integrate new-generation information technologies like 5G + AI into recruitment processes (Feng, Y. 2023). Additionally, building a more efficient business management big data analysis platform using front-end information technology can improve the core competitiveness of enterprises

(Xiang, W., et al. 2022). Furthermore, utilizing big data for the evaluation and management of research performance in universities can provide scientific and effective management means through the establishment of various databases and improving big data infrastructure and standards (Li, L., et al. 2021). Lastly, leveraging human resource data in decision-making processes can help extract valuable information about employees' behavior and potential to support organizational strategies. By combining these strategies, universities can significantly enhance the application of Big Data Technology in Human Resource Management, leading to improved efficiency and effectiveness in managing human resources.

3. Resolutions to deepen the application of information technology

To address the application of information technology needs to be deepened in Human Resource Management in universities, several resolutions can be implemented based on the research papers provided. These include enhancing the informatization awareness of human resource managers, integrating new-generation information technologies like 5G + AI into recruitment processes, providing information technology training for HR managers (Feng, Y. 2023). Additionally, it is crucial to reform teaching methods and models, incorporating computer technology to improve the quality of teaching and promote students' comprehensive development (Bashtawi, M. 2022). Furthermore, ensuring management support and involvement in the adoption of Human Resource Information Systems (HRIS) is essential to overcome challenges and enhance HR service delivery (Hagan, K. A., et al. 2022). Finally, developing electronic human resources systems, expanding the use of electronic forms for employee management, and integrating computerized management information systems are vital steps to promote the effective utilization of Information Technology in Human Resource Management in universities (Al Shobaki, M. J., et al. 2017).

4. Resolutions to improve the Database technology

To enhance Database Technology in Human Resource Management in universities, several resolutions have been proposed. Firstly, there is a need to boost the informatization awareness of human resource managers, integrate new-

generation technologies like 5G + AI into recruitment processes, and provide information technology training for HR managers (Feng, Y. 2023). Additionally, the implementation of an adaptable University Human Resource Management System (UHRMS) utilizing adaptive computing technology can improve data management by reducing complexity and enhancing self-management capabilities (Ye F., et al. 2014). This system has shown lower transaction response times and higher throughput compared to traditional methods (Ye F., et al. 2015). Moreover, developing systems based on JSP and utilizing methods like combined searching and data dictionary can significantly enhance department working efficiency, data coherence, and report generation in university human resource management (Zhu, Y. 2009). Embracing big data technologies and innovation in personnel renewal, service, training, and evaluation can further improve the quality of human resources management in universities (LI, Y. 2014).

5. Resolutions to enhance the application of artificial intelligence technology

To address the insufficient application of Artificial Intelligence (AI) Technology in Human Resource Management in universities, several key resolutions can be implemented based on the research. Firstly, enhancing the informatization awareness of human resource managers and integrating new-generation technologies like 5G and AI into recruitment processes can significantly improve HR information capabilities (Feng, Y. 2023). Additionally, practical solutions to challenges in using data science approaches in HR tasks, such as the complexity of HR phenomena and accountability issues, can be found by focusing on causal reasoning, randomization, experiments, and employee input (Cappelli, P., et al. 2019). Furthermore, leveraging AI technologies to aid recruitment, improve compliance, streamline onboarding, and enhance training can help universities accomplish more with fewer resources, ultimately supporting the development of a successful workforce (Achchab, S., et al. 2021). By addressing these aspects, universities can bridge the gap and optimize the application of AI in HR management.

Resolutions to improve university human resource management are shown in table 2.2.

Table 2.2 Resolutions to improve university human resource management

Scholar	1	2	3	4	5
Feng, Y. (2023)	●	●	●	●	●
Ye F., et al. (2014)	●			●	
Addo, P. K., et al. (2023)	●		●		●
Salamah, S. (2022)	●	●			
Mashoshyna, N., et al. (2021)	●		●	●	
Xiang, W., et al. (2022)		●			●
Li, L., et al. (2021)		●			●
Bashtawi, M. (2022)			●	●	
Hagan, K. A., et al. (2022)	●	●	●		●
Al Shobaki, M. J., et al. (2017)		●	●		●
Ye F., et al. (2015)	●			●	●
Zhu, Y. (2009)		●		●	
LI, Y. (2014)	●		●	●	●
Cappelli, P., et al. (2019)	●				●
Achchab, S., et al. (2021)		●		●	●
Total	9	8	7	8	10

1. Resolutions to unify the data management organization and policy standards (9)

2. Resolutions to strengthen the application of big data technology(8)

3. Resolutions to deepen the application of information technology (7)

4. Resolutions to improve the Database technology (8)

5. Resolutions to enhance the application of artificial intelligence technology (10)

Conclusion:

This research will build on the findings of previous studies in several key areas. Firstly, to utilize the advancements in informatization awareness among HR managers and the integration of technologies like 5G and AI into HR processes, as noted by Feng (2023), to streamline recruitment and data management. Additionally, the development of adaptive HR management systems using computing technology, as highlighted by Ye and colleagues (2014), will inform my approach to improving self-management capabilities and data handling in university settings. The implementation of comprehensive HR policies, continuous feedback mechanisms, and the establishment of a Coordination Council, based on the research of Addo and Mashoshyna et al. (2021), will be foundational for standardizing practices and ensuring compliance. Furthermore, the application of big data and AI technologies in HRM, as discussed by Xiang et al. (2022) and Achchab et al. (2021), will enhance the efficiency of management and support the development of a successful workforce. Lastly, insights from Zhu (2009) and LI (2014) on database technology and big data innovation will guide my efforts to improve HR management quality in universities.

Factors Influencing University Human Resource Management**1. Factors influencing university Personnel Information Management**

Unified data management standards play a crucial role in enhancing personnel information management in university human resource management systems. The implementation of intelligent information technologies in personnel information management systems (Mao, H., et al. 2022) allows for the design of structured databases, improving data accuracy and reducing errors. Additionally, the utilization of adaptive computing technology in university human resource management systems aids in enhancing self-management capabilities and reducing management complexity (Ye F., et al. 2014). Furthermore, the transformation of HRM practices in universities under globalization influences, such as Project 5-100, has led to the formalization of personnel policies, recruitment process improvements, and increased international collaborations, positively impacting HRM systems in

universities. By adhering to unified data management standards, universities can optimize their personnel information management processes, leading to increased efficiency, reduced errors, and improved decision-making support in human resource management (Morin, M. 2023).

Complete data storage, such as through digital archives and data warehouses, plays a crucial role in personnel information management within university human resource management. Utilizing advanced technologies like data warehouses can assist in selecting the right individuals for suitable positions, enhancing decision-making processes (Mohammed, A. M., et al. 2014). Additionally, the digitization of personnel files in universities is a strategic task that ensures true resource sharing and efficient management of employee data (Lu, X. 2018). Implementing a personnel information management system with intelligent technologies can significantly improve office affair management efficiency, reducing personalized service time and minimizing data errors (Mao, H., et al. 2022). By leveraging human resource information management systems that include modules for daily affair management, salary management, recruitment, training, and examinations, universities can transform human management into resource management, fostering better communication and cooperation functions (Hao, J., et al. 2016). Ultimately, complete data storage positively impacts personnel information management by enhancing decision-making, efficiency, and overall organizational effectiveness.

Smooth data sharing plays a crucial role in personnel information management within university human resource management. The digitization of archives in colleges and universities, emphasizes the importance of transforming traditional file information into digital data for seamless sharing and resource accessibility. Additionally, the utilization of advanced information technology, is vital for optimizing the allocation of human resources and enhancing the efficiency of personnel management. Furthermore, the implementation of intelligent information technologies in personnel information management systems, leads to improved office affair management efficiency and reduced data errors. Therefore, by ensuring smooth data sharing through digitalization and advanced technologies, universities

can streamline personnel information management processes, enhance decision-making capabilities, and ultimately improve overall organizational performance (Mao, H., 2022).

Secure data management plays a crucial role in personnel information management within university human resource management. Implementing secure data management practices, such as utilizing Data Warehouses (Adamu, A. M., et al. 2023) and advanced information technologies (Morin, M. 2023), enhances the efficiency and accuracy of managing staff records, payroll, promotions, and decision-making processes. By incorporating intelligent information technologies into personnel information management systems (Mao, H., et al. 2022), universities can streamline office affair management, reduce data errors, and improve personalized service time. Additionally, a human resource information management system with modules for daily affair management, salary management, recruitment, training, and examinations (Hao, J., et al. 2016) can transform human management into resource management, fostering better communication and cooperation functions. Overall, secure data management not only safeguards sensitive information but also optimizes the utilization of human resources, contributing to the overall effectiveness of university human resource management.

The factors influencing university Personnel Information Management are shown in Table 2.3.

Table 2.3 Factors influencing university Personnel Information Management

Scholar	1	2	3	4	5
Mao, H., et al. (2022)	●	●		●	●
Ye F., et al. (2014)		●	●	●	
Morin, M. (2023)		●	●	●	
Mohammed, A. M., et al. (2014)	●		●	●	●
Lu, X. (2018)		●			●
Hao, J., et al. (2016)	●	●		●	●
Mao, H., (2022)	●	●	●		
Adamu, A. M., et al. (2023)			●	●	●
Total	4	6	5	6	5

1. Unified data management standards (4)
2. Complete data storage (6)
3. Accurate data recording (5)
4. Smooth data sharing (6)
5. Secure data management (5)

Conclusion:

In this research, I will build on several key findings from previous studies on university human resource management (HRM). First, I will implement intelligent information technologies in personnel information management systems, drawing on insights from Mao et al. (2022) to design structured databases that enhance data accuracy and reduce errors. I will also utilize adaptive computing technology in university HRM systems, as highlighted by Ye et al. (2014), to improve self-management capabilities and reduce management complexity. Additionally, I will examine the impact of globalization on HRM practices in universities, including the formalization of personnel policies and improvements in the recruitment process, as described by Morin (2023). The role of complete data storage, including digital

archives and data warehouses, will be a crucial aspect of my study, following the findings of Mohammed et al. (2014) and Lu (2018), to improve decision-making processes and enhance the efficiency of personnel information management. Furthermore, I will integrate secure data management practices and advanced information technologies into personnel management systems, building on the work of Adamu et al. (2023) and Hao et al. (2016), to optimize the utilization of human resources and enhance overall organizational effectiveness. These studies will collectively provide a comprehensive framework for my efforts to improve personnel information management in university HRM systems.

2. Factors influencing university Personnel Recruitment Management

Personalized recruitment processes, such as integrating potential applicants' names and photographs into recruitment ads, have been shown to significantly impact personnel recruitment management in university human resource management. Research indicates that personalized recruitment ads increase organizational attractiveness for individuals with low involvement in the ad's message, subsequently boosting their intentions to click on the ad and pursue the advertised job opportunity (Pfiffelman, J., F., et al. 2022). Additionally, modern innovative technologies, including the use of information from social networks for initial staff selection stages, have been proposed to enhance the efficiency of recruitment processes in universities, segmenting applicants into different groups based on their online profiles to streamline the selection process (Vyacheslav, M., et al. 2020). Moreover, individualized employee motivation strategies are highlighted as crucial for long-term personnel potential development in educational institutions, emphasizing the importance of combining material and non-material incentives to enhance the productivity of scientific and pedagogical staff in universities (Izbassova, N. 2022).

Intelligent recruitment strategies, utilizing artificial intelligence (AI) in personnel recruitment management, have shown significant impacts on university human resource management. These strategies enhance the recruitment process by reducing bias in candidate selection, personalizing training, analyzing emotional

states, and managing employee well-being (Konovalova, V., 2022). By incorporating AI, universities can streamline recruitment processes, improve efficiency, and reduce labor costs (Mariani, K. 2023). Additionally, AI-based recruitment methods can help in attracting the best talent, enhancing employee retention, and automating administrative tasks, ultimately contributing to the overall effectiveness of human resource management in universities (Long, F. 2023). However, it is crucial to address the risks of dehumanization in personnel management that may arise from the overreliance on AI systems, necessitating a balance between technological advancement and maintaining the human touch in recruitment processes (Mariani, K. 2023).

Unified data storage management systems have a significant impact on personnel recruitment management in university human resource management. These systems provide a unified interface for managing data stored across different remote storage services, enabling efficient access to personnel data (Chang, P. C. 2019). By identifying data source objects and provisioning a unified data source, these systems facilitate data access for recruitment purposes, enhancing the recruitment process for data consuming entities (Stolte, R. G., et a. 2011). Additionally, the development of personnel policy and HRM systems in universities, influenced by projects like Project 5-100, has led to the formalization of personnel policies, improved recruitment processes, and increased global partnerships, ultimately enhancing recruitment practices and overall HRM effectiveness in universities. Such advancements in data management systems and HRM practices contribute to streamlining recruitment processes and improving the quality of personnel data management in university settings.

The implementation of automated recruitment processes in university human resource management has shown significant impacts on personnel recruitment management. Automated systems utilizing AI and algorithms streamline recruitment by matching skills, shortlisting candidates, and scheduling interviews, ultimately saving time and reducing errors in candidate selection. These systems not only enhance efficiency but also provide job seekers with platforms to identify required

skills and generate resumes automatically, benefiting both employers and candidates (G.L.L., Silva, I., et al. 2022). Additionally, the use of AI in recruitment processes has been recognized as advantageous, transforming mundane tasks into automated processes and allowing human resources to focus on more strategic aspects of performance and development (Fraij, J., et al. 2021). However, it is crucial to consider regulations to prevent discrimination and bias in the recruitment process, highlighting the importance of protecting workers' rights and privacy (Mariani, K. 2023).

Intelligent candidate matching and screening, facilitated by Artificial Intelligence (AI) systems, have revolutionized personnel recruitment management in university human resource management. AI applications in candidate screening streamline the process by automating repetitive tasks, reducing time spent on sifting through numerous applications, and enhancing the quality of hire by matching candidates' skills with job requirements (Mariani, K. 2023). The use of AI in recruitment processes has been recognized as crucial in filling the gap and enhancing massive recruiting processes, especially in university settings where attracting top talent is essential (Abuladze, L., et al. 2023). Furthermore, the integration of AI in HRM practices has been highlighted as a positive development, advancing the theoretical understanding of AI's growth in the HR sector and promoting economically viable organizational practices. Overall, the intelligent candidate matching and screening powered by AI offer universities efficient, effective, and competitive recruitment strategies to secure the best talent in a highly competitive academic environment (Chattopadhyay, P. 2020).

The factors influencing university Personnel Recruitment Management are shown in Table 2.4.

Table 2.4 Factors influencing university Personnel Recruitment Management

Scholar	1	2	3	4	5
Pfiffelman, J., F., et al. (2022)	●		●		●
Vyacheslav, M., et al. (2020)	●	●		●	
Izbassova, N. (2022)			●		●
Konovalova, V., (2022)	●	●		●	
Mariani, K. (2023)	●	●	●	●	●
Long, F. (2023)		●			
Chang, P. C. (2019)	●	●		●	●
Stolte, R. G., et a. (2011)			●		
G.L.L., Silva, I., et a. (2022)	●		●	●	●
Fraj, J., et al. (2021)	●		●		
Abuladze, L., et al. et al. (2023)		●		●	●
Chattopadhyay, P. (2020)	●		●	●	
Total	8	6	7	7	6

1. Personalized recruitment process (8)
2. Intelligent recruitment strategies (6)
3. Unified data storage management (7)
4. Automated recruitment process implementation (7)
5. Intelligent candidate matching and screening (6)

Conclusion:

In this research, I will explore several key findings related to personnel development management in university human resource management (HRM). This includes leveraging information technology to enhance resource access, support remote work, and promote continuous learning, as noted by Chatterjee Rao et al. (2020) and Zheng (2017). These advancements streamline HR processes, improve data integration, and align employee skills with organizational needs (Karasek, 2019).

I will also focus on the identification of training needs, which is crucial for developing effective HR strategies and policies. This approach enhances staff preparation, boosts performance, and contributes to organizational development, as discussed by Oscar et al. (2018) and Shymko (2023). Personalized training plans and Individual Development Plans (IDP) will be examined for their role in aligning development with strategic goals and improving performance (Harnos, 2022; Mahdzir et al., 2021). Furthermore, the impact of reasonable resource allocation and strategic talent planning on optimizing HR management and enhancing university performance will be analyzed, as highlighted by Ren (2022) and Zhou (2017). Targeted career guidance and effective personnel management practices will also be considered for their role in improving competitiveness and attracting talent (Berdnikova et al., 2020; Rahayasih et al., 2019).

3. Factors influencing university Personnel Development Management

Investing in information technology resources has a significant impact on personnel development management in university human resource management. The utilization of digital technologies enhances access to resources, facilitates remote work, and promotes continuous learning and skill development. Information technology advancements have transformed traditional human resource management tasks into more efficient and intelligent processes, enabling better analysis of vast amounts of human resource data (Chatterjee Rao, A., et al. 2020). IT tools in recruitment, training, and talent management streamline HR processes, improve data integration, and align employee competencies with organizational needs, ultimately enhancing personnel management efficiency and employee engagement (Karasek, A. 2019). Moreover, the adoption of new technologies, such as robotics, predictive analytics, and artificial intelligence, supports data-driven decision-making and flexible work patterns, presenting challenges but also opportunities for skilled employees to thrive in a dynamic business environment. Additionally, modern information processing technology and tools, including computer network technology, contribute to office automation, improving work quality and efficiency in university personnel management (Zheng, J. 2017).

The identification of training needs plays a crucial role in Personnel Development Management within university human resource management. It helps in planning and preparing personnel for successful work completion (Oscar, Fernando Cruz Perez, et al. 2018), while also serving as an important indicator of management culture and organizational atmosphere improvement (Vitalii, Shymko. 2023). By detecting training needs, universities can enhance the efficiency of their human resources management, leading to the development of strategies and policies for human resources development, talent management, and career planning (Mashoshyna, N., et al. 2021). Moreover, the impact of critical HRM practices like training and development on employee performance has been highlighted, emphasizing the need for continuous improvement in HRM practices to boost productivity and strive for excellence in university settings (Rania Alkhalilah, et al. 2023). Ultimately, the identification of training needs contributes significantly to the overall enhancement of personnel potential and organizational development within university human resource management (Izbassova, N. 2022).

The impact of personalized development of training plans on Personnel Development Management in university human resource management is significant. Personalized training paths are crucial for adapting to individual learning paces and problem-solving styles (Rafael, Harnos. 2022). They contribute to enhancing the performance and abilities of university administrators through Individual Development Plans (IDP), aligning with the university's strategic planning and key performance indicators (Mohamad Nasaruddin Mahdzir, et al. 2021). Additionally, the concept of talent management, which includes IDPs, is essential for developing human resources in higher education institutions, focusing on talent identification, development, and career planning (Mashoshyna, N., et al. 2021). Moreover, the Individual Development Planning model emphasizes identifying experiences for individual growth to achieve common organizational goals, promoting employee excellence and organizational success (A Azizi, et al. 2020). These practices lead to a more efficient and effective human resource management system in universities, ensuring continuous improvement and alignment with institutional objectives.

Reasonable allocation of resources in university human resource management has a significant impact on Personnel Development Management. It plays a crucial role in optimizing the allocation of human resources, enhancing the efficiency of running a school, and promoting the balanced development of enterprise management (Ren, Q. 2022). By utilizing advanced information technology and decision support systems, universities can analyze human resource data, predict demand, and establish effective human resource management models, leading to improved talent management and overall organizational performance (Morin, M. 2023). Additionally, the establishment of a scientific talent evaluation mechanism, clarification of age structures, and strategic talent planning based on reasonable resource allocation contribute to the development and utilization of university human resources, ultimately driving the progress and success of educational institutions (Zhou, W. 2017).

“Targeted guidance” plays a crucial role in personnel development management within university human resource management by providing specific paths for individuals to follow for career growth and skill enhancement (Barden, L. J. 1989). Effective personnel management is essential for smart universities to enhance competitiveness and attract talent, focusing on personnel selection, evaluation criteria, certification methods, motivation, and career progression (Leyla F. Berdnikova, et al. 2020). Career development opportunities for educational personnel are vital for improving college quality services, requiring contributions from non-lecturer staff, administrative personnel, technicians, and librarians (Yayah, Rahyasih., et al. 2019). Additionally, the implementation of HRM practices like training and development, recruitment, and employee appraisal significantly impacts employee performance in universities, emphasizing the need for continuous improvement in HR strategies to enhance productivity and excellence (Rania Alkhalailah, et al. 2023). The demand for career guidance services and appropriate training for career practitioners is increasing due to economic changes and evolving workplace patterns, highlighting the importance of tailored guidance for personnel development in universities (Wendy Patton. 2000).

The factors influencing university Personnel Development Management are shown in Table 2.5.

Table 2.5 Factors influencing university Personnel Development Management

Scholar	1	2	3	4	5
Chatterjee Rao, A., et al. (2020)		●		●	●
Karasek, A. (2019)	●		●		
Zheng, J. (2017)		●	●		●
Oscar, Fernando Cruz Perez, et al. (2018)		●	●	●	
Vitalii, Shymko. (2023)				●	●
Mashoshyna, N., et al. (2021)	●		●	●	●
Rania Alkhalailah,. et al. (2023)		●	●		
Izbassova, N. (2022)	●	●		●	●
Rafael, Harnos. (2022)	●			●	●
Mohamad Nasaruddin Mahdzir, et al. (2021)		●	●		
A Azizi, et al. (2020)		●		●	
Ren, Q. (2022)	●			●	●
Morin, M. (2023)		●	●		●
Zhou, W. (2017)	●	●		●	
Barden, L. J. (1989)			●		●
Leyla F. Berdnikova, et al. (2020)	●	●			●
Yayah, Rahyasih., et al. (2019)	●			●	
Wendy Patton. (2000)	●	●			●
Total	9	11	8	10	11

1. Investment in information technology resources (9)
2. Identification of training needs (11)
3. Personalized development of training plans (8)
4. Reasonable allocation of resources (10)
5. Targeted guidance (11)

Conclusion:

In this research, I will incorporate several key findings from prior studies on personnel development management in university human resource management (HRM). Firstly, I will focus on the role of information technology in enhancing HR processes, such as improving access to resources, supporting remote work, and promoting continuous learning (Chatterjee Rao et al., 2020; Zheng, 2017). These advancements streamline recruitment, training, and talent management, aligning employee skills with organizational needs and boosting overall efficiency (Karasek, 2019). Additionally, the identification of training needs is crucial for developing effective HR strategies and policies. This approach helps in planning and preparing staff, enhancing performance, and improving organizational development (Oscar et al., 2018; Shymko, 2023). The research will also highlight the significance of personalized training plans and Individual Development Plans (IDP) for aligning development with strategic goals and improving performance (Harnos, 2022; Mahdzir et al., 2021). Furthermore, I will explore the impact of reasonable resource allocation and strategic talent planning on optimizing HR management and enhancing university performance (Ren, 2022; Zhou, 2017). Targeted career guidance and effective personnel management practices are also vital for improving organizational competitiveness and attracting talent (Berdnikova et al., 2020; Rahayasih et al., 2019).

4. Factors influencing university Performance Assessment Management

Intelligent performance assessment, utilizing technologies like Artificial Intelligence (AI), has a significant impact on Performance Assessment Management in university human resource management. Studies highlight that AI integration in performance management systems leads to increased employee performance

through predictive analytics. Additionally, the use of decision support models incorporating fuzzy logic and survey analysis aids in fairly assessing HR performance, particularly in educational institutions like universities (Ditdit Nugeraha Utama, & Eri Rustamaji. 2018). Furthermore, the assessment of performances in higher education institutions is crucial for enhancing teaching quality, social activities, and organizational climate, ultimately improving overall efficiency and educational quality (Loredana Văcărescu Hobeau. 2011). Therefore, the adoption of intelligent performance assessment practices can enhance employee capability, productivity, and overall success in university human resource management (Tigist Shiferaw, 2022).

Accurate data management plays a crucial role in Performance Assessment Management within university human resource management systems. Proper data management, as highlighted in (Ye F., et al. 2015), is essential for overcoming distortions, logical confusion, and unstructured data commonly found in university HR systems. By implementing adaptable systems that enhance self-management capabilities and decrease complexity through adaptive computing technologies, universities can achieve lower transaction response times and higher throughput, as demonstrated in the study by Ye Fan, Shaoyun Guan, and Honglue Lv (Ye F., et al. 2014). This accurate data management not only ensures the reliability and integrity of performance assessment data but also facilitates informed decision-making processes, ultimately leading to more effective performance evaluations and management practices within university HRM systems.

In university human resource management, the impact of "In-depth analysis of performance data" on Performance Assessment Management is crucial for enhancing employee motivation, job performance, and satisfaction (Samuel Bangura. 2022). Utilizing modern and scientific management methods, such as HR data analysis, can help optimize the management team and improve overall efficiency, leading to better decision-making processes and increased productivity. Furthermore, the study on Saudi Arabian public universities highlights the dissatisfaction with existing Performance Appraisal Systems (PASs) and emphasizes the importance of communication, transparency, and organizational improvements in the performance

assessment process, indicating a need for a more dynamic and integrated model for conducting performance appraisals to ensure the effectiveness of human resources in universities (Faiz Awad Alqahtani, 2010).

Unified assessment standards play a crucial role in enhancing Performance Assessment Management within university human resource management. The implementation of sound HRM practices, including training, performance appraisal, and compensation, significantly impacts employees' performances by improving commitment, punctuality, trust, and productivity (Tigist Shiferaw. 2022). Additionally, the evaluation of performances in higher education institutions directly influences teaching quality, social activities, and organizational climate, ultimately enhancing the efficiency and quality of the education process (Loredana Văcărescu Hobeau. 2011). Performance management systems, when integrated effectively with broader human resource systems, align employees' work behavior with organizational goals, leading to enhanced employee capability and productivity, which is vital for universities to navigate the challenges of the evolving higher education landscape (Sayantani, Ghosh., et al. 2012). Ultimately, unified assessment standards contribute to attracting competent human resources, fostering job satisfaction, and driving positive outcomes for both employees and the organization (Qiu, Z. 2023).

A sound feedback mechanism plays a crucial role in Performance Assessment Management within university human resource management by enhancing performance accountability, motivation, job satisfaction, and overall organizational outcomes. Feedback mechanisms are essential for providing timely and personalized feedback to academic staff, aiding in their professional development and performance improvement (Carrie Lewis Miller, C., et al. 2020). Additionally, feedback mechanisms facilitate communication and feedback loops between accountability subjects and objects, enabling universities to identify areas for improvement in resource allocation, performance management, and teaching quality (Xie, M. 2015). Effective feedback mechanisms not only support the evaluation of teaching, research, and administrative staff performances but also contribute to the growth of efficiency and quality in the education process within higher education institutions

(Loredana Văcărescu Hobeau. 2011). Ultimately, a robust feedback mechanism is integral to driving continuous improvement and excellence in university HRM practices and policies (Qiu, Z. 2023).

The factors influencing university Performance Assessment Management are shown in Table 2.6.

Table 2.6 Factors influencing university Performance Assessment Management

Scholar	1	2	3	4	5
Ditdit Nugeraha Utama, & Eri Rustamaji. (2018)	●		●	●	●
Loredana Văcărescu Hobeau. (2011)	●	●	●	●	●
Tigist Shiferaw. (2022)	●		●		●
Ye F., et al. (2015)		●			●
Ye F., et al. (2014)	●		●	●	
Samuel Bangura. (2022)	●		●	●	●
Faiz Awad Alqahtani. (2010)	●	●		●	●
Syantani, Ghosh., et al. (2012)		●	●		●
Qiu, Z. (2023)	●		●	●	●
Carrie Lewis Miller, C., et al. (2020)	●		●		●
Xie, M. (2015)	●	●		●	
Total	9	5	8	7	9

1. Intelligent performance assessment (9)
2. Accurate data management (6)
3. In-depth analysis of performance data (8)
4. Unified assessment standards (8)
5. Sound feedback mechanism (10)

Conclusion:

In this research, I will examine the impact of information technology and personalized strategies on personnel development management in university HRM. Investing in digital technologies enhances personnel development by improving resource access, remote work, and continuous learning. Technologies like AI and predictive analytics streamline HR processes and align employee skills with organizational needs (Chatterjee Rao et al., 2020; Zheng, 2017). Identifying training needs is crucial for planning, improving management culture, and developing effective HR strategies (Oscar et al., 2018; Shymko, 2023). Personalized training and Individual Development Plans (IDPs) align with strategic goals and boost performance (Harnos, 2022; Mahdzir et al., 2021). Reasonable resource allocation optimizes HR management, improving efficiency and talent management through advanced IT and decision support systems (Ren, 2022; Morin, 2023; Zhou, 2017). Targeted career guidance supports career growth and enhances university competitiveness by impacting selection, evaluation, and career progression (Berdnikova et al., 2020; Yayah et al., 2019). Effective HRM practices, including training and recruitment, are vital for adapting to evolving workplace patterns and improving performance (Alkhalailah et al., 2023; Patton, 2000).

5. Factors influencing university Internal Promotion Management

Unified hiring criteria play a crucial role in Internal Promotion Management within university human resource management. Research suggests that internal promotion, coupled with employee training, significantly enhances employee performance and organizational competitiveness (Dorothy, N. 2019). By integrating methodologies like Fuzzy Analytic Hierarchy Process (FAHP) and Grey Relational Analysis (GRA), universities can effectively prioritize personnel for promotion based on unified criteria, leading to better decision-making and talent management (Yavuz, Ö., et al. 2018). Additionally, the use of linguistic neutrosophic sets (LNSs) and extended TOPSIS methods can further streamline talent evaluation and selection processes, ensuring that information from different decision makers supports each other, ultimately benefiting university HRM practices (Liang, R., et al. 2018). Moreover, internal

labor markets within universities exhibit a strong port of entry at lower academic ranks, emphasizing the importance of unified criteria in promotions and the role of research and teaching criteria in determining promotion dynamics (Catherine Haeck, C., et al. 2012). Overall, unified hiring criteria not only streamline internal promotion processes but also contribute to talent retention, motivation, and organizational growth, making them essential in university HRM practices (Alpa, P. 2020).

Complete data information plays a crucial role in Internal Promotion Management within university human resource management. Having comprehensive data allows for a better understanding of employee performance, which is a key factor in determining promotion dynamics (Catherine Haeck, C., et al. 2010). Additionally, data management systems in universities are essential for overcoming distortions and logical confusion in human resource data, highlighting the importance of structured and accurate information for effective decision-making (Ye F., et al. 2014). Furthermore, digitalization in universities emphasizes the significance of data inventory for making informed managerial decisions regarding the development and promotion of educational programs, showcasing the need for complete and up-to-date data both internally and externally (Paskal, Z., et al. 2019). Therefore, complete data information not only enhances internal promotion dynamics based on performance but also aids in strategic decision-making processes within university human resource management.

Intelligent job matching, facilitated by technologies like deep neural networks and semantic processing techniques (Jorge Martinez-Gil, J., 2016), can significantly impact Internal Promotion Management in university human resource management. By utilizing advanced algorithms for job applicant matching and intelligent recommendation systems, universities can enhance their internal promotion processes by efficiently matching employee skills with suitable job opportunities within the institution. This approach not only streamlines the promotion process but also ensures a better fit between employees and their new roles, ultimately improving overall employee performance and organizational competitiveness (Dorothy, N. 2019). Moreover, the use of digital transformation strategies in HRM, such

as data visualization and deep learning algorithms, can further optimize internal promotion decisions by analyzing job demand information and employee profiles to make more informed and effective promotion choices (Qing, N. 2022).

The impact of a transparent decision-making process on internal promotion management in university human resource management is significant. Transparency about individual performance levels has been shown to decrease strategic promotion behavior when group incentives are absent but not when group incentives are present (Gary Hecht, G., et al. 2023). Additionally, a streamlined and transparent promotion process can assist faculty members in achieving their promotion goals, leading to greater satisfaction and security (Simon Field, S. 2021). Furthermore, internal promotion, as an incentive, has been found to enhance employee performance and organizational competitiveness, emphasizing the need to harmonize and integrate internal promotion practices with transparent decision-making processes for improved outcomes in university human resource management (Dorothy, N. 2019). Moreover, utilizing advanced information technology to enhance transparency and decision-making in university personnel management can optimize human resource allocation and improve overall efficiency in university administration (Morin, M. 2023).

"Clear promotion channels" play a crucial role in Internal Promotion Management within university human resource management. Research by Haeck and Verboven highlights the significance of internal promotion dynamics, where performance measures like research and teaching performance are key determinants of promotions (Catherine Haeck, C., et.al. 2012). Additionally, Lengler and Seitter emphasize the importance of internal university marketing to gain acceptance for initiatives like continuing education, stressing the need for clear communication of the benefits of such programs to university staff (Asja, Lengler., et al. 2023). Furthermore, Schüller and Chalupský's study on internal marketing communication at public universities underscores the need for well-defined organizational structures and non-financial incentives to enhance internal marketing communication within universities (David Schüller, D., et al. 2011). Therefore, establishing transparent

promotion channels not only aids in promoting deserving staff but also contributes to effective internal communication and staff engagement in university settings.

The factors influencing university Internal Promotion Management are shown in Table 2.7.

Table 2.7 Factors influencing university Internal Promotion Management

Scholar	1	2	3	4	5
Dorothy, N. (2019)	●	●	●	●	●
Yavuz, Ö., et al. (2018)	●	●	●		●
Liang, R., et al. (2018)	●	●		●	
Catherine Haeck, C., et al. (2012)	●		●	●	
Alpa, P. (2020)	●	●	●	●	●
Catherine Haeck, C., et al. (2010)		●		●	●
Ye F., et al. (2014)		●	●		
Paskal, Z., et al. (2019)	●		●		●
Jorge Martinez-Gil, J., et al. (2016)		●	●		
Qing, N. (2022)	●	●	●	●	●
Gary Hecht, G., et al. (2023)	●			●	●
Simon Field, S. (2021)	●	●	●		
Morin, M. (2023)	●		●	●	●
Catherine Haeck, C., et.al. (2012)		●		●	●
Asja, Lengler., et al. (2023)	●	●	●	●	
David Schüller, D., et al. (2011)	●		●	●	●
Total	12	11	12	11	10

1. Unified hiring criteria (12)
2. Complete data information (11)
3. Intelligent job matching (12)
4. Transparent decision-making process (11)
5. Clear promotion channels (10)

Conclusion:

In this research, I will examine key findings related to internal promotion management in university HRM. Unified hiring criteria, including methodologies like FAHP and GRA (Yavuz et al., 2018) and tools like LNSs (Liang et al., 2018), are crucial for effective employee evaluation and promotion decisions (Dorothy, 2019). These criteria help manage internal labor markets by emphasizing research and teaching performance (Haeck et al., 2012). Comprehensive data is essential for evaluating employee performance and making informed promotion decisions (Haeck et al., 2010; Ye et al., 2014). Digital systems and accurate data management improve decision-making and address data distortions (Paskal et al., 2019). Intelligent job matching using technologies like deep neural networks (Martinez-Gil, 2016) enhances promotion processes by aligning skills with job opportunities (Dorothy, 2019). Advanced digital tools and data analytics further optimize these decisions (Qing, 2022). Transparency in promotion decisions reduces strategic behavior and increases faculty satisfaction (Hecht et al., 2023; Field, 2021). Combining transparency with advanced IT improves HR efficiency (Morin, 2023). Finally, clear promotion channels support effective internal communication and staff engagement (Haeck et al., 2012; Lengler & Seitter, 2023; Schüller & Chalupský, 2011), ensuring a well-structured promotion system.

6. Factors influencing university Compensation and Benefits Management

Centralized unified data management systems play a crucial role in enhancing Compensation and Benefits Management in university human resource management. By centralizing account information and updating it efficiently, these systems improve time efficiency, accuracy, and informatization of compensation management (Cao, Y., et al. 2021). Additionally, they facilitate the exchange of information between various management systems, addressing the challenges posed by changing compensation policies. Furthermore, the implementation of adaptable university human resource management systems utilizing adaptive computing technology enhances self-management capabilities, decreases complexity, and improves transaction response time and throughput in managing compensation and benefits (Ye F., et al. 2015).

Overall, these systems streamline processes, unify fragmented management works, and elevate the overall level of compensation management in universities.

Intelligent analysis of compensation and benefits, utilizing technologies like Artificial Intelligence (AI) and Data Mining (DM), has a significant impact on Compensation and Benefits Management in university human resource management. By incorporating AI-based HR apps and DM technology, universities can enhance decision-making accuracy in managing compensation and benefits for their faculty members (Bai, Y. 2022). This intelligent analysis enables HR personnel to predict future situations, analyze existing data, and provide valuable support for decision-making processes, ultimately leading to a more efficient and effective Compensation and Benefits Management system. Moreover, the use of intelligent computing methods in HR processes has been shown to be a game-changer, offering actionable results promptly and influencing various domains of business, including HR functions in universities.

Personalized incentive measures, such as Flexible Benefit Plans and tailored incentive systems, play a crucial role in Compensation and Benefits Management within university human resource management. These measures, as discussed in various research papers (Anastasiya, A., Dubinenko, A., et al. 2022), enhance employees' pay efficiency, attract and retain staff, and increase labor motivation. By allowing employees to participate in designing their remuneration packages and providing personalized incentives, universities can improve staff performance, achieve strategic goals, and ensure the quality of education. The adoption of personalized incentive measures not only maximizes net pay without increasing human resources expenses but also contributes to the development of the university by aligning staff incentives with organizational objectives and individual needs (María Dolores Vidal-Salazar, M., et al. 2015).

Intelligent policy analysis in Compensation and Benefits Management plays a crucial role in enhancing job performance and job satisfaction levels of university employees. By utilizing intelligent big data analysis and decision-making models, universities can design innovative HRM practices that attract competent human

resources, increase motivation, and improve overall outcomes for both employees and the organization (Qiu, Z. 2023). These practices involve competitive salary structures, rewards, promotions, job security, and effective fringe benefits that contribute significantly to employee satisfaction and performance levels. Additionally, the application of intelligent policy analysis aids in predicting future scenarios, providing decision-making support, and increasing the accuracy of HRM models, ultimately leading to the development of professional and competent lecturers within the university setting (Stefani, L., et al. 2015).

A fair compensation and benefits system plays a crucial role in Compensation and Benefits Management within university human resource management. Studies from various contexts emphasize the significance of transparency, equity, fair distribution, and consistency in reward systems (Gebayaw, Adugna, Admassie. 2019). The implementation of a competitive compensation and benefits system is essential for attracting, motivating, and retaining employees in the university setting (Bogdan, Aldea. 2015). Employee perception of fairness in compensation methods is vital for achieving organizational goals and enhancing job satisfaction, motivation, and retention (Riza, Demir., et al. 2014). Furthermore, amidst the rise of remote work, ensuring fair compensation becomes even more critical to neutralize the negative impacts on employees and maintain their well-being (M., Avogaro. 2022). Therefore, establishing fair and ethical compensation practices aligned with market conditions and employee performance is essential for optimizing Compensation and Benefits Management in university human resource management.

The factors influencing university Compensation and Benefits Management are shown in Table 2.8.

Table 2.8 Factors influencing university Compensation and Benefits Management

Scholar	1	2	3	4	5
Cao, Y., et al. (2021)	●		●	●	
Ye F., et al. (2015)	●	●	●		●
Bai, Y. (2022)		●	●	●	
Anastasiya, A., Dubinenko, A., et al. 2022(2022)	●		●	●	●
María Dolores Vidal-Salazar, M., et al. (2015)	●	●	●	●	●
Qiu, Z. (2023)	●	●	●	●	●
Stefani, L., et al. (2015)	●				●
Gebayaw, Adugna, Admassie. (2019)		●	●	●	
Bogdan, Aldea. (2015)	●		●	●	●
Rıza, Demir., et al. (2014)	●	●	●		●
M., Avogaro. (2022)	●	●		●	
Total	9	7	9	8	7

1. Centralized unified data management (9)
2. Intelligent analysis of compensation and benefits (7)
3. Personalized incentive measures (9)
4. Intelligent policy analysis (8)
5. Fair compensation and benefits system (7)

Conclusion:

In this research, I will draw on several key findings from previous studies on Compensation and Benefits Management in university human resource management. Centralized unified data management systems are essential for improving efficiency and accuracy in compensation management, as these systems streamline

information processing and address challenges related to changing compensation policies (Cao, Y., et al., 2021). The use of Artificial Intelligence (AI) and Data Mining (DM) technologies is crucial for enhancing decision-making accuracy by predicting future scenarios and analyzing existing data, thereby improving compensation and benefits systems (Bai, Y., 2022). Additionally, personalized incentive measures, such as Flexible Benefit Plans, are highlighted for their role in enhancing pay efficiency and staff motivation, contributing to strategic goals and improved staff performance (Anastasiya, A., et al., 2022). Intelligent policy analysis, employing big data and decision-making models, is vital for designing effective HRM practices that boost employee satisfaction and performance (Qiu, Z., 2023). Finally, establishing a fair and transparent compensation system is critical for attracting, retaining, and motivating employees, ensuring equity in reward distribution and addressing challenges like remote work (Gebayaw, Adugna, Admassie, 2019). These insights will guide the development of a comprehensive framework for optimizing compensation and benefits management in university HR systems.

Theoretical Basis for Designing Human Resource Management Decision Making Model

The theoretical basis for designing a Human Resource Management decision making model lies in the integration of data mining technology, management decision-making tools, and cloud computing advantages. By incorporating the Apriori algorithm for data mining, utilizing management decision support systems for balanced decision-making, and leveraging cloud computing for resource integration and standardized data processing, a comprehensive model can be developed. This model should focus on providing standardized information, intelligent decision analysis, and efficient business processes to enhance human resource management effectiveness and support decision-making activities within enterprises. Additionally, the model should consider the optimization of human resource allocation, prediction of demand, and grading and promotion analysis to improve university personnel management efficiency.

1. Data Mining Technology

The theoretical basis of data mining for designing a Human Resource Management (HRM) decision support system model is multifaceted, incorporating various algorithms and methodologies to enhance decision-making processes. At the core, data mining techniques such as the Apriori algorithm are utilized to identify association rules within HR data, which helps in understanding patterns and relationships among different HR variables. This algorithm, despite its initial shortcomings in time efficiency, has been improved through intersection operations to expedite the matching stage of candidate item sets, thereby providing a scientific basis for HR decision-making and improving human resource management applications (Chen, J. 2022).

Additionally, decision tree algorithms like ID3 and C4.5 play a crucial role in predicting employee performance and behavior by analyzing past data to find the best combination of attributes for accurate predictions. These algorithms are integral to building HR data mining models that support decision-making processes (Zhang, J. 2023). The integration of these algorithms into HRM systems has shown significant improvements in efficiency, with fuzzy data mining techniques increasing system efficiency by 7.2% (Peng, Q. 2022). Moreover, ensemble classifier approaches, such as the Ensemble Classifier-Decision Tree (EC-DT), which combines multiple decision tree algorithms like C4.5, Random Tree, J48, and Simple Cart, have demonstrated higher classification accuracy and better performance in HRM systems, further validating the effectiveness of data mining in HR decision support.

The rapid advancement of computer management technology and the extensive use of network data have also facilitated the development of big data mining techniques, which are now being employed to construct comprehensive management decision support systems. These systems are designed to standardize data, provide intelligent decision analysis, and optimize HR business processes, thereby enhancing overall business efficiency and supporting enterprise development (Duan, L.-N. 2022). The combination of these data mining techniques and algorithms forms a robust theoretical foundation for designing HRM decision

support systems, enabling organizations to make more informed and effective HR decisions (Li, J. 2022).

2. Cloud computing advantages

The theoretical basis of management decision-making tools for designing a Human Resource Management (HRM) decision support system (DSS) model is multifaceted, incorporating various methodologies and technologies to enhance decision-making processes. A foundational aspect is the integration of data mining and cloud computing, which allows for the extraction of high-quality information from vast data pools, thereby supporting managers in making informed decisions (Cai, C., et al. 2021). The historical evolution of management decision support systems highlights the importance of creating a decision-making environment that leverages timely, complete, and high-quality information, facilitated by the interaction of software with available management data (Li, J. 2022).

The design of HRM DSS models often involves multi-criteria decision-making frameworks, such as the modified TOPSIS method, which adapts to the fuzzy nature of HRM tasks by eliminating hierarchical criteria structures and incorporating expert evaluation coefficients (Mammadova, M.G., et al. 2015). Additionally, the use of Analytic Network Process (ANP) and Analytic Hierarchy Process (AHP) models addresses the interdependence among evaluation criteria, providing a systematic approach to employee selection that aligns with organizational strategy (Chang, S.-H., et al. 2013). The integration of genetic algorithms in recruitment decision-making models further optimizes the selection process by balancing parallel and sequential operations to produce high-quality solutions efficiently (Tkatek, S., et al. 2021).

The application of decision support tools in HRM is also enhanced by the principles of stakeholder engagement, ensuring that the tools are designed to meet the real needs and perspectives of users, thereby fostering trust and adoption (Ahani, N., et al. 2021). In the context of university personnel management, the development of HRM decision models involves predicting human resource demand and conducting grading and promotion analyses, which are essential for optimizing resource allocation and improving management efficiency (Morin, M. 2023). The use

of fuzzy set theory and Fuzzy TOPSIS models in HR selection processes ensures fair judgment among applicants by addressing the vagueness and complexity of evaluation criteria (Magaji, K.M., 2014).

Moreover, the design of HRM DSS models for mental activity employees involves multi-criteria ranking in uncertain environments, utilizing additive aggregation methods to evaluate performance effectively (Mammadova, M., et al. 2020). Overall, the theoretical basis for designing HRM DSS models is rooted in a combination of advanced data processing technologies, multi-criteria decision-making frameworks, stakeholder engagement principles, and optimization algorithms, all of which contribute to more effective and efficient HR management practices.

3. Management decision-making tools

The theoretical basis of cloud computing advantages for designing a Human Resource Management (HRM) decision support system (DSS) model is multifaceted, leveraging the inherent strengths of cloud technology to enhance HR functions. Cloud computing offers significant benefits such as large-scale data processing, high reliability, versatility, and scalability, which are crucial for developing a robust HRM DSS. The integration of cloud computing into HRM allows for the creation of a comprehensive human resources data pool, facilitating data mining to extract high-quality information that supports managerial decision-making (Cai, C., et al. 2021).

By utilizing cloud computing, HRM systems can handle massive amounts of data through distributed processing and configurable data management, ensuring data normalization and integrity, which traditional systems often lack (Yang, H.-P. 2022). The cloud-based HRM model also addresses existing issues in HR management information systems by optimizing data quality and processes, thus meeting the increasing demand for statistical analysis and information management from organizational leaders (Zhou, L. 2021). Furthermore, cloud computing enables HR functions to strategically integrate into business operations, offering benefits such as reduced communication gaps, increased organizational excellence, effective talent strategies, and data-driven decision-making, which are essential for maintaining

competitiveness in a rapidly evolving business environment (Arora, P., & Poonam. 2019).

The human-computer cloud environment, which relies on ontologies for resource discovery and automatic decision support workflow composition, further enhances the capability of HRM systems by enabling dynamic workflow construction and efficient task management (Smirnov, A., et al. 2018). This environment supports the deployment of human-based applications, allowing for the formation of dynamic networks of human contributors and software resources to solve ad hoc tasks, thereby improving the flexibility and responsiveness of HRM systems (Alexander, V., Smirnov., et al. 2019). In healthcare organizations, the adoption of E-HRM based on cloud computing has shown to be influenced by factors such as technological, organizational, legal, and environmental dimensions, highlighting the importance of a comprehensive approach to cloud integration in HRM (Hamad, Y., et al. 2019).

The modular design of cloud-based HRM systems, which includes components such as personnel management, salary management, recruitment, training, and evaluation, ensures better communication and cooperation within the HR department, supporting daily work management and resource optimization (Fan, X. 2015). Lastly, the use of digital contracts and ontology-based decision support services in human-computer cloud environments allows for the effective regulation of interactions between applications and contributors, facilitating task decomposition and handling of complex, unstructured tasks (Alexander, V., Smirnov., et al. 2019). Collectively, these theoretical advantages underscore the transformative potential of cloud computing in designing advanced HRM DSS models that are capable of meeting contemporary organizational needs.

The theoretical basis for designing Human Resource Management decision making model are shown in Table 2.9.

Table 2.9 Theoretical basis for designing Human Resource Management decision making model

Scholar	1	2	3
Chen, J. (2022)	●		●
Zhang, J. (2023)	●		
Peng, Q. (2022)	●	●	
Duan, L.-N. (2022)	●		
Li, J. (2022)	●	●	
Cai, C., et al. (2021)		●	●
Mammadova, M.G., et al. (2015)		●	
Chang, S.-H., et al. (2013)		●	
Tkatek, S., et al. (2021)	●	●	
Ahani, N., et al. (2021)		●	
Morin, M. (2023)		●	
Magaji, K.M., (2014)	●	●	
Mammadova, M., et al. (2020)		●	
Yang, H.-P. (2022)			●
Zhou, L. (2021)			●
Arora, P., & Poonam.(2019)	●		●
Smirnov, A., et al. (2018)			●
Alexander, V., Smirnov., et al. (2019)			●
Hamad, Y., et al. (2019)		●	●
Fan, X. (2015)			●
Total	8	11	9

1. Data mining technology
2. Cloud computing advantages
3. Management decision-making tools

Conclusion:

In designing a Human Resource Management (HRM) decision making model, my research will integrate insights from various studies on data mining, cloud computing, and management decision-making tools. Data mining technologies, such as the Apriori algorithm and decision tree algorithms like ID3 and C4.5, are pivotal for identifying patterns and predicting employee performance, enhancing decision-making in HRM systems (Chen, J., 2022; Zhang, J., 2023). Additionally, the use of fuzzy data mining techniques and ensemble classifiers has demonstrated improvements in system efficiency and classification accuracy (Peng, Q., 2022). Cloud computing offers advantages such as scalable data processing and improved data integration, which support the creation of comprehensive HRM systems and address data quality issues (Cai, C., et al., 2021; Yang, H.-P., 2022). The application of multi-criteria decision-making frameworks, including TOPSIS, AHP, and genetic algorithms, further refines recruitment and promotion processes by balancing various criteria and optimizing decisions (Mammadova, M.G., et al., 2015; Tkatek, S., et al., 2021). These elements collectively form the theoretical foundation for developing an HRM DSS model that integrates standardized information, intelligent analysis, and efficient business processes, aimed at optimizing human resource allocation and improving overall management efficiency (Li, J., 2022; Zhou, L., 2021).

Design and Evaluation Methods of Decision Making Model for Human Resource Management**1. Delphi method**

The Delphi method is a structured, systematic process used to gather and refine the collective opinion of a panel of experts through multiple rounds of questionnaires, aiming to achieve consensus on a specific issue. Developed by the RAND Corporation in the 1950s and 1960s, it has since been widely applied across various fields such as economics, business, engineering, library and information science, and notably in health services and pharmacy practice research (Huseynov, O. H. 2023).

The process involves several iterative rounds where experts anonymously respond to questionnaires, and their responses are aggregated and shared with the group after each round, allowing for feedback and refinement of opinions (Abahani, L. 2023). This iterative nature helps transform subjective data into quasi-objective data through statistical analysis, converging towards stable points of agreement (Alharbi, M. G., et al. 2021). The method's flexibility allows it to be used for various purposes, including forecasting, policy creation, guideline establishment, and trend identification (Sablatzky, T. 2022).

One of the key advantages of the Delphi method is its ability to include experts from different geographical locations, enabling them to participate in their own time, which can be particularly beneficial in fields where face-to-face meetings are challenging. However, this also means the process can be time-consuming and lacks the immediacy of direct interaction. The method has evolved to address some of its limitations, such as the assumption of absolute reliability of expert opinions, by incorporating approaches like Z-number theory to handle partially reliable information (Huseynov, O. H. 2023).

Despite its widespread use, there is a lack of standardized guidelines for conducting and reporting Delphi studies, leading to methodological inconsistencies (Jaam, M., et al. 2022). Researchers are encouraged to carefully plan their Delphi studies, considering factors such as panel selection, consensus criteria, and the number of rounds to ensure reliability and validity. The Delphi technique's structured approach to developing consensus has proven particularly valuable in areas where research is limited, ethically or logistically challenging, or where existing evidence is conflicting, making it a pivotal tool in developing best practice guidance (Nasa, P., et al. 2021). Overall, the Delphi method's ability to harness collective intelligence through a systematic, iterative process makes it a powerful tool for decision-making and forecasting in complex real-world problems (Naisola-Ruiter, V. 2022).

2. Expert survey method

The expert survey method is a research technique that involves gathering insights, opinions, and assessments from individuals recognized as experts in a

particular field. This method is highly valued for its ability to provide reliable, in-depth information and forecasts on complex issues that are difficult to quantify. The process typically involves several steps, including the development of a questionnaire, selection of experts, determination of their competence, conducting the survey, and analyzing the results to ensure consistency and reliability. One of the key advantages of expert surveys is their ability to harness the collective knowledge and experience of experts to support decision-making processes, as seen in various applications such as improving the efficiency of trading companies (Karpenko, M. A., et al. 2022), optimizing dredging techniques in harbors (Kaizer, A. 2020), and enhancing management decisions at the municipal level (Kondratovich, D. L. 2022).

The Delphi method, a popular iterative approach used in expert surveys, involves multiple rounds of questioning with controlled feedback, allowing experts to refine their opinions until a consensus is reached (Karpenko, M. A., et al. 2022). Expert surveys are also instrumental in sociological research, where they help diagnose, model, and predict social phenomena, and assess the social consequences of projects and management decisions. In the field of energy efficiency, expert surveys are used to form a unified statistical information base and develop practical recommendations for industrial facilities (Verstina, N., et al. 2021). The method's flexibility allows for various modes of administration, including in-person interviews and self-administered web-based surveys, each with its own set of advantages and limitations (Baker, E., et al. 2014).

Despite its widespread use, the expert survey method does face challenges, such as ensuring the competence of selected experts and achieving a high level of agreement among them (Ikart, E. M. 2019). Additionally, the method is employed in specialized areas like formal methods in research, industry, and education, where it serves as a collective exercise in thinking and provides a snapshot of key actors in the field (Garavel, H., et al. 2020). The method's ability to evaluate factors that are difficult to formalize makes it particularly useful in assessing the efficiency of operations, such as the performance of passenger ships, by considering both quantitative and qualitative criteria. Furthermore, expert surveys are crucial in the

information retrieval community for finding experts in specified areas, leveraging various techniques to evaluate and categorize expert opinions (Lin, S. et al. 2017).

3. Interview method

The interview method is a widely utilized technique in social sciences and other fields for collecting qualitative data by engaging directly with participants to gather their knowledge, views, and experiences, which are crucial for understanding social realities (Perry, C., Sampson, C. 2022). This method encompasses various forms, including structured, semi-structured, and unstructured interviews, each serving different research needs. Structured interviews involve predetermined questions and response options, while unstructured interviews allow for more open-ended exploration of topics. Semi-structured interviews strike a balance, guided by preexisting theories but open to new inquiries (Wethington, E., et al. 2015).

The interview method is particularly valuable because it enables researchers to capture nuances such as tone of voice, facial expressions, and hesitations, which written responses might conceal (Perry, C., Sampson, C. 2022). In the context of state capitalism research, interviews are used to support analyses and drive main arguments, although there is often a lack of engagement with methodological literature, leading to unclear execution and presentation of interview data (Karaoğuz, H. E. 2022). Innovative approaches like the data engagement interview have been developed to allow participants to interact with their personal data in real-time, providing richer insights and enabling interviewers to observe and ask questions throughout the engagement (Moore, J., et al. 2021).

In educational research, interviews are essential for gathering data, organizing it systematically, and interpreting it to address specific problems effectively (Buriro, A. G., et al. 2017). Technological advancements have also influenced interview methods, with AI-based systems now capable of generating interview plans, scoring responses, and even adjusting the difficulty of questions based on the interviewee's answers, thereby improving efficiency and objectivity (Yu, Wei., et al. 2020). These AI systems can also analyze real-time responses to ensure flexibility and interactivity during the interview process (Sun, J., et al. 2019).

Despite the potential for bias and subjectivity, the interview method remains a powerful tool for researchers, offering a depth of understanding that other methods like surveys or observations may not provide (Perry, C., Sampson, C. 2022). Overall, the interview method's adaptability and depth make it indispensable for a wide range of research applications, from understanding complex social phenomena to evaluating job candidates efficiently.

4. CIPP model

The CIPP model, developed by Stufflebeam, stands for Context, Input, Process, and Product, and is a comprehensive framework used for evaluating programs and systems across various fields, particularly in education and training. The model's primary aim is to provide a structured approach to assess the effectiveness and efficiency of a program by examining its different components. The Context evaluation focuses on identifying the needs, problems, and opportunities that the program aims to address, ensuring that the goals are relevant and aligned with the stakeholders' needs (Rahmawati, M., et al. 2023).

Input evaluation examines the resources, strategies, and action plans used to achieve the program's objectives, including the availability of materials, infrastructure, and human resources (Alzet, Rama., et al. 2023). The Process evaluation monitors the implementation of the program, assessing whether the activities are being carried out as planned and identifying any issues or deviations that may arise during execution (Rahmadani. 2022). Finally, the Product evaluation measures the outcomes and impacts of the program, determining whether the goals have been achieved and evaluating the overall effectiveness and sustainability of the program's results (Azaz, Akbar., et al. 2023).

The CIPP model has been widely applied in various educational settings. For instance, it has been used to evaluate leadership training programs in corporate universities, where it helped in assessing the effectiveness of training in enhancing employee competencies and fostering a culture of continuous learning within the organization (Muhammad Arif, Rahman, et al. 2023). In the context of Christian religious education, the CIPP model has been instrumental in helping teachers

identify gaps in their teaching methods and improve the overall learning experience for students (Lamhot, Naibaho. 2023). Similarly, the model has been used to evaluate specific educational programs, such as the PIPOCITA program in elementary schools, which aimed to foster independence and emotional connections among students, teachers, and parents (Rahmawati, M., et al. 2023).

The model's versatility is further demonstrated in its application to curriculum evaluation in schools, where it has been used to assess the implementation of new curricula and their impact on student learning outcomes and teacher competencies (Rurisman., et al. 2023). Moreover, the CIPP model has proven valuable in higher education, particularly in evaluating courses and programs to ensure they meet the needs of students and align with educational objectives. For example, it has been used to evaluate an ELT Pedagogy course, highlighting the need for better integration of theory and practice and addressing the specific needs of rural contexts (Rejina, K.C., et al. 2023).

In vocational education, the model has been employed to promote international cooperation and improve the quality of education through a structured evaluation framework. Additionally, the model has been applied to assess the effectiveness of online learning programs, providing insights into the strengths and weaknesses of digital education platforms and helping to enhance the overall learning experience for students (Fitria, Fii, Silmi, Kaaffah, Kamilia., et al. 2023).

The design and evaluation methods of decision making model for human resource management are shown in Table 2.10.

Table 2.10 Design and evaluation methods of decision making model for human resource management

Scholar	Delphi	Expert survey	Interview	CIPP model
Huseynov, O. H. (2023)	●			
Abahani, L. (2023)	●			
Alharbi, M. G., et al. (2021)	●			
Sablatzky, T. (2022)	●			
Jaam, M., et al. (2022)	●			
Nasa, P., et al. (2021)	●			
Naisola-Ruiter, V. (2022)	●			
Karpenko, M. A., et al. (2022)		●		
Kaizer, A. (2020)		●		
Kondratovich, D. L. (2022)		●		
Verstina, N., et al. (2021)		●		
Baker, E., et al. (2014)		●		
Ikart, E. M. (2019)		●		
Garavel, H., et al. (2020)		●		
Lin, S. et al. (2017)		●		
Perry, C., Sampson, C. (2022)			●	
Wethington, E., et al. (2015)			●	
Karaoğuz, H. E. (2022)			●	
Moore, J., et al. (2021)			●	
Buriro, A. G., et al. (2017)			●	
Yu, Wei., et al. (2020)			●	
Sun, J., et al. (2019)			●	
Rahmawati, M., et al. (2023)				●
Alzet, Rama., et al. (2023)				●
Rahmadani. (2022)				●

Table 2.10 (Continued)

Scholar	Delphi	Expert survey	Interview	CIPP model
Azaz, Akbar., et al. (2023)				●
Muhammad Arif, Rahman, et al. (2023)				●
Lamhot, Naibaho. (2023)				●
Rurisman., et al. (2023)				●
Rejina, K.C., et al. (2023)				●
Fitria, Fii, Silmi, Kaaffah, Kamilia., et al. (2023)				●
Total	7	8	7	9

Conclusion:

Applicability of the Delphi Method in this Study: This research primarily employs the Delphi method to achieve Research Objective 2. Through two rounds of expert consultation, an effective decision making model for human resource management for Chinese universities in Sichuan was established.

Applicability of the Expert Survey Method in this Study: This research utilizes the expert survey method to understand the current problems, resolutions, and influencing factors in human resource management in Chinese universities.

Applicability of the Interview Method in this Study: This study primarily employs the interview method to achieve Research Objective 3. During the interviews, researchers and respondents engaged in in-depth discussions around the research objectives, providing a basis for optimizing the decision making model for human resource management for Chinese universities in Sichuan.

Applicability of the CIPP Model in this Study: The CIPP model, with its process-oriented and improvement-oriented characteristics, is suitable for evaluating the interactive effects of various management functions and influencing factors in

human resource management. It meets the need to assess the current state of human resource management in universities in Sichuan, China, and helps establish an effective feedback mechanism. The CIPP model aids researchers in diagnosing and improving the model by collecting opinions.

Chapter 3

Research Methodology

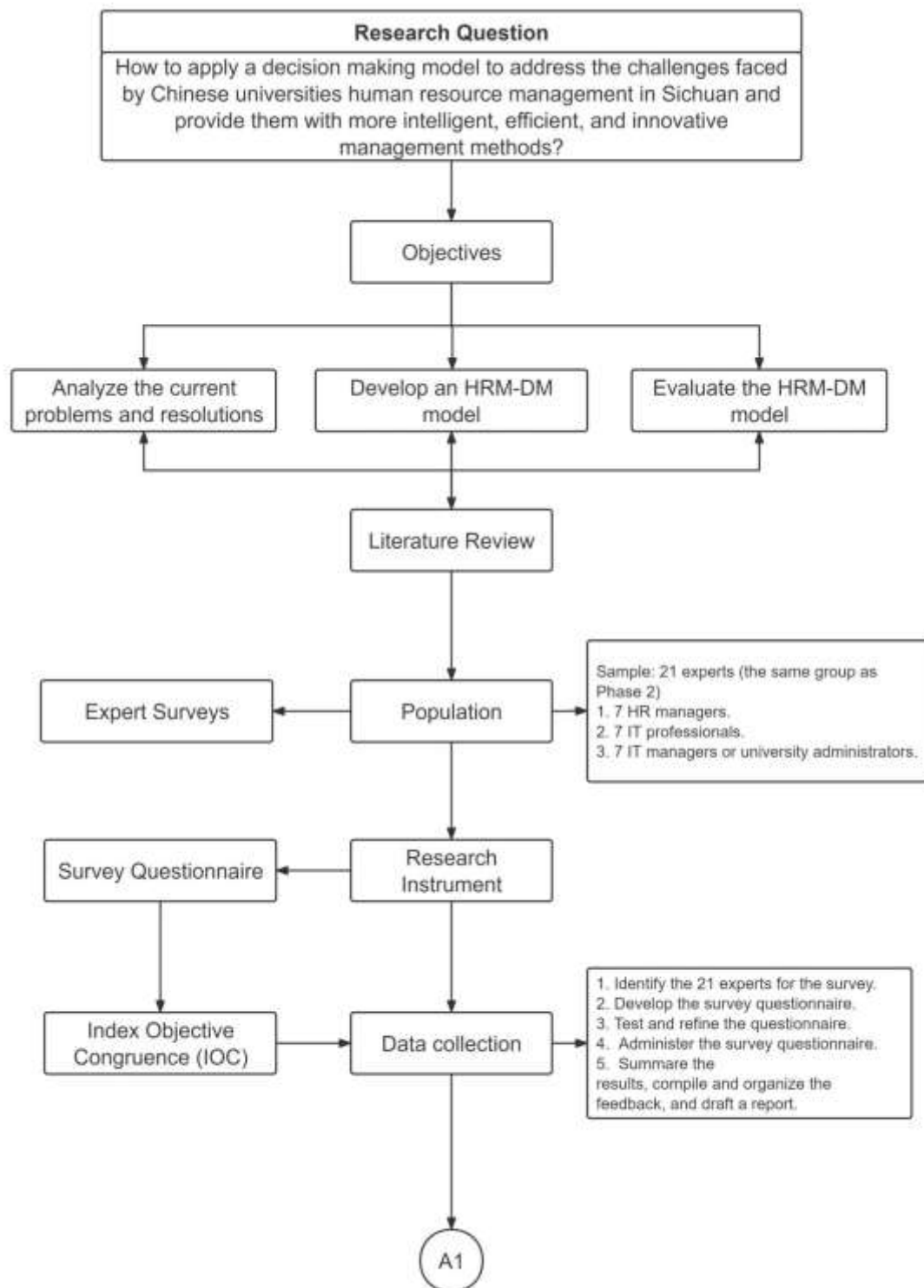
The primary objective of this doctoral thesis is to explore how to leverage digital technologies, including artificial intelligence, to enhance and support the development of a decision making model for Chinese universities human resource management in Sichuan. This research is based on a carefully crafted research question, aiming to reveal how, in the unique social, cultural, and economic context of China, digital technology can be utilized to optimize human resource management in universities, increase the efficiency of human resource management practices, and provide support and services for decision-makers.

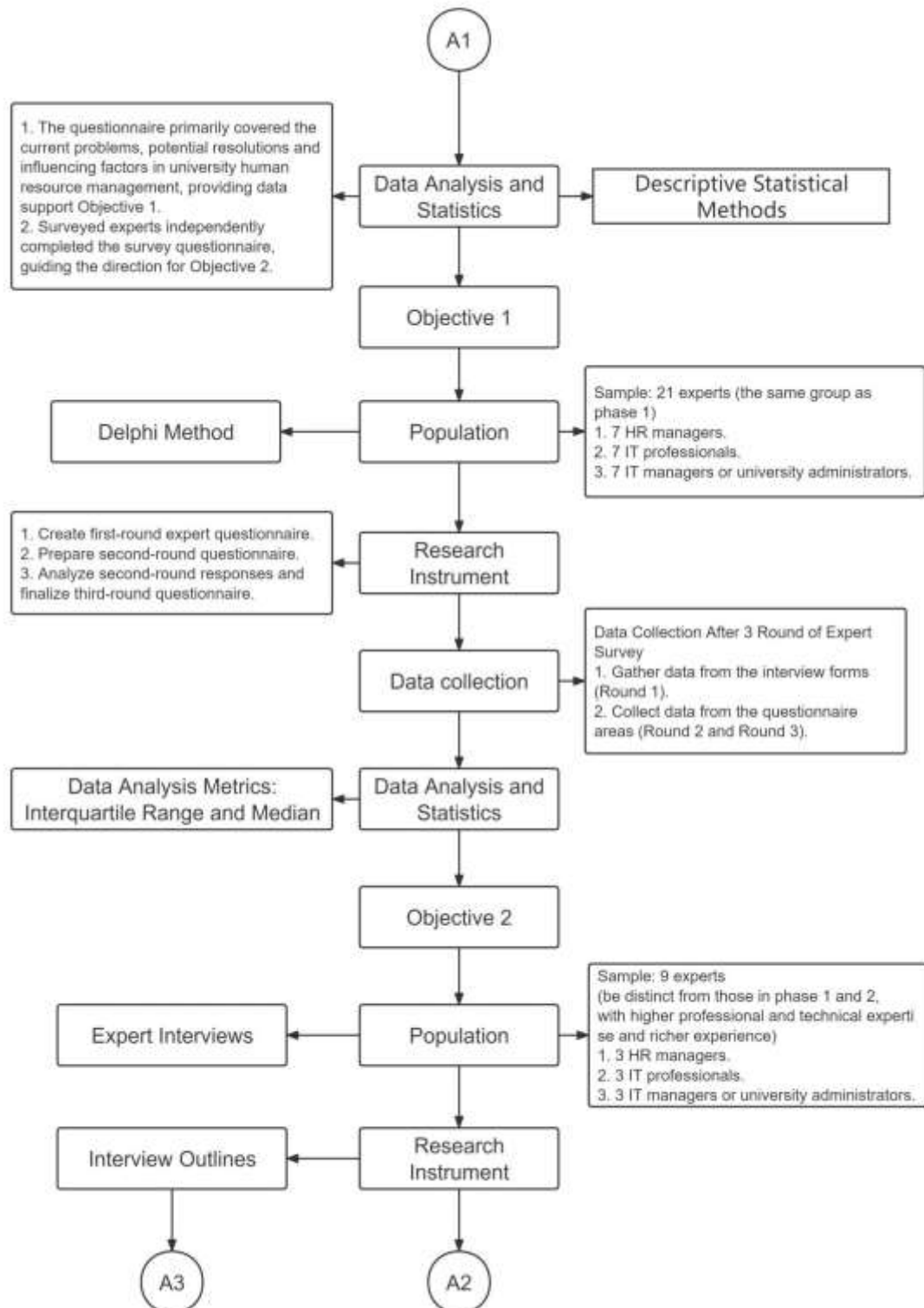
This research has three core objectives. The first objective is to identify the problems and potential resolutions for the effective implementation of human resource management systems in Chinese universities in Sichuan. The second objective is to design a feasible and efficient human resource management decision making model to enhance human resource management practices in Chinese universities. The third objective is to rigorously evaluate and continually refine this model based on the evaluation results. These objectives collectively form the framework of the research methodology in this thesis. The following chapters will delve into the specific details of the research methodology, outlining the research design, data collection strategies, and analytical techniques employed to achieve these objectives and address the core research question.

In the academic endeavor undertaken for this doctoral thesis, the research can be conceptualized in three sequential facets: the initial formulation of the research plan, the execution of the research procedures, and the subsequent compilation of the research report. The procedural design utilizes a multi-stage approach to achieve the established objectives. Specifically, literature review and expert surveys are employed to achieve Objective 1, clarifying the problems in Chinese university human resource management systems and potential resolutions.

The Delphi Method is used to achieve Objective 2, serving as a rigorous means to reach expert consensus. The Expert Interview Method is applied to achieve Objective 3, providing valuable qualitative insights through the evaluation results. This methodological framework ensures a robust and comprehensive exploration of the current research question.

The following diagram provides an overview of the entire research process, from initiation to knowledge dissemination. It visually summarizes the structured approach adopted to achieve the research objectives.





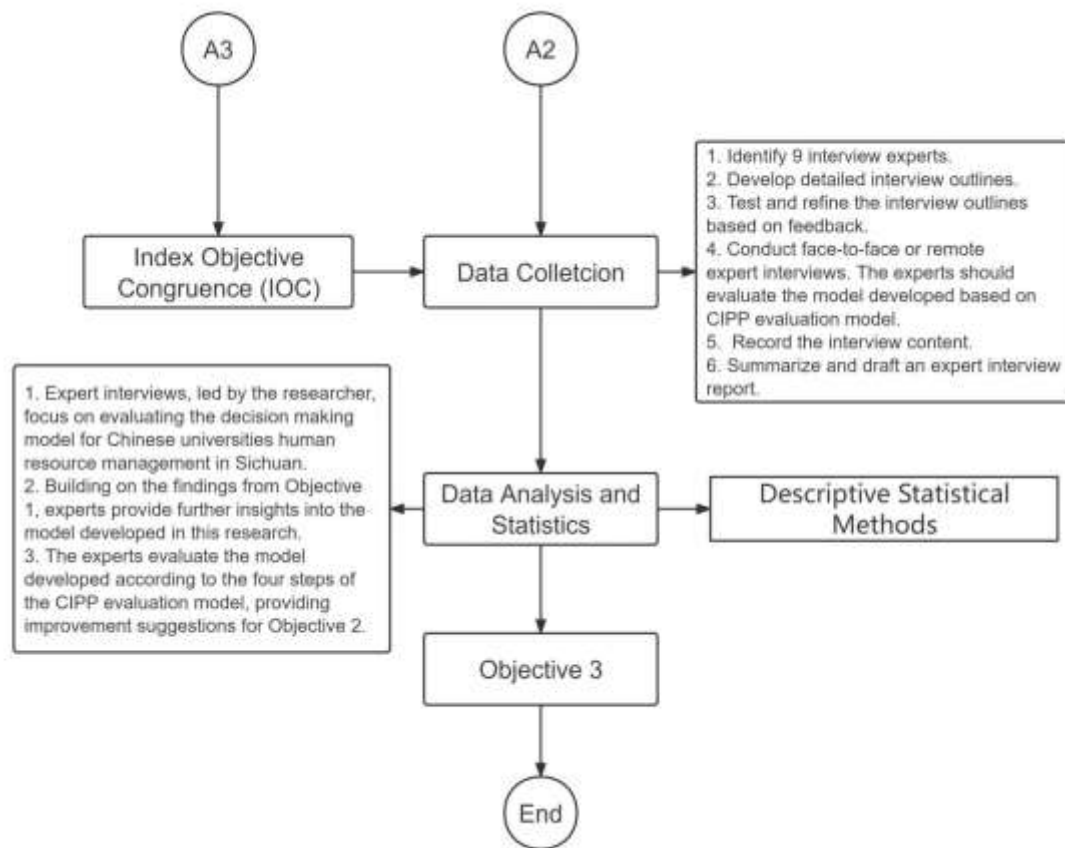


Figure 3.1 Details of the Research Process Steps

Phase 1: To study current problems and resolutions on Chinese university human resource management systems

Apply the Expert Surveys to achieve objective 1.

Population

Using the targeted sampling method, 21 experts with experience in the field of human resource information management in Chinese universities in Sichuan were selected. These experts included 7 HR personnel, 7 information technology professionals, 7 IT managers or university administrators.

The qualifications of these 21 experts were as follows:

1. Over 10 years of work experience.
2. Technology professionals should hold advanced professional titles or doctoral degrees.

3. Managers should hold positions such as university administrators, heads of administrative departments, or directors of department-level units.

4. Possess substantial experience in the use of digital technologies.

Research Instrument

Survey Questionnaire

A comprehensive survey questionnaire was developed, including questions and themes to guide the interview process. The content of the survey questionnaire covered various aspects of human resource management systems, including recruitment, training, performance management, benefits, and issues related to digital technology.

Data Collection

The research expert survey questionnaire asks respondents to indicate the extent to which each statement reflects components of effectiveness. Each statement is measured using a Likert five-point scale (1932):

5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree.

See Table 3.1 for reference.

Table 3.1 Scale of Effectiveness for Human Resource Management Decision Making for Chinese universities in Sichuan

Perception level	Score
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

The data collection process proceeded as follows:

Step 1: Identifying the 21 experts for the survey.

Step 2: Developing the survey questionnaire.

Step 3: Inviting 5 experts to test the inter-observer consistency index (IOC) of the questionnaire and refining the questionnaire based on experts' feedback.

Step 4: Administering the survey questionnaire.

Step 5: Summarizing the survey results, compiling and organizing questionnaire feedback, and drafting an expert survey report.

Data Analysis

Based on the survey questionnaire results, statistical data, and expert opinions, the analysis aimed to identify problems, resolutions, and influencing factors concerning human resource management systems in Chinese universities. Specific details included:

1. The questionnaire primarily covered the current status, problems, potential resolutions and influencing factors of human resource management in Chinese universities, providing data support for Objective 1 (researching current problems and resolutions in Chinese university human resource management systems).

2. Surveyed experts, drawing upon their knowledge backgrounds, management experiences, and digital technology usage experiences, independently completed the survey questionnaire, guiding the direction for Objective 2 (developing an effective decision making model for human resource management for Chinese universities in Sichuan).

3. Utilize descriptive statistical methods for statistical analysis of research data.

In the data analysis for this research, the researchers used the following statistical indicators to analyze the questionnaires provided by the surveyed experts:

Inter-quartile Range (IQR):

The inter-quartile range can be used to analyze the concentration and distribution of expert opinions. This research adopts the consensus standards as outlined by Li X., et al. (2022), as follows:

Table 3.2 Consensus Degree Based on Interquartile Range (IQR) in Expert Opinion Surveys

Interquartile range	Consensus Degree
$0 \leq \text{IQR} \leq 1.8$	High
$1.8 \leq \text{IQR} \leq 2.0$	Medium
$\text{IQR} \geq 2.0$	Low

Median (MD)

The median is the score data that falls in the middle position among all the scores provided by the experts in sequence. It can describe the central tendency of expert opinions, and its interpretation is based on the standards set by the researcher as follows:

Table 3.3 Median-Based Expert Opinion Classification

Median	The possibility of this item
$Md \geq 4.50$	Most likely
$3.50 \leq Md \leq 4.49$	More likely
$2.50 \leq Md \leq 3.49$	Moderate likely
$1.50 \leq Md \leq 2.49$	Less likely
$Md \leq 1.50$	Least likely

From the answers of all experts, the median is derived, and its meaning is interpreted based on the standards set by the researcher, as follows:

A median score of 4.50 or above signifies that the expert group considers the statement most likely.

A median score ranging from 3.50 to 4.49 means that the expert group considers the statement very likely.

A median score ranging from 2.50 to 3.49 indicates that the expert group views the information as moderately likely.

A median score ranging from 1.50 to 2.49 suggests that the expert group uniformly believes the information is less likely.

A median score below 1.50 indicates that the expert group considers the information least likely.

Based on literature research, this research developed an expert survey questionnaire and confirmed the appropriateness and feasibility of the questionnaire answers through feedback. According to data analysis rules, the Median value of expert feedback should be 4.50 or above, indicating that experts believe a high level has been achieved. The IQR (Inter-quartile Range) value of expert feedback should be 1.8 or below. Considering the number and diversity of samples, elements with Median values greater than 4.50 or IQR values less than 1.8, which partially meet the above data analysis principles, will be retained for this research.

Phase 2: To design a decision making model for Chinese universities human resource management in Sichuan

Apply the Delphi method to achieve objective 2.

Population

Using the targeted sampling method, 21 experts with experience in the field of human resource information management in Chinese universities in Sichuan were selected. These experts included 7 HR personnel, 7 information technology professionals, 7 IT managers or university administrators.

Qualifications of these 21 experts are as follows:

1. Possess 10 years or more of work experience.
2. Technology professionals should hold advanced professional titles or doctoral degrees.
3. Managers should hold positions such as university administrators, department heads, or departmental directors.
4. Have significant experience in the use of digital technology.

To ensure the continuity and effectiveness of the research work, the research population and sample group in phase 2 can be replicated from phase 1.

Research Instruments

1. Expert Questionnaire Content

The expert questionnaire consists of three versions, each corresponding to one of the three rounds of expert opinion solicitation:

(1) The first version is the expert interview questionnaire. The questionnaire used by the researchers consists of three parts:

Part One: Demographic Variables (Checklist) - General information about the respondents.

Part Two: Variables for determining an effective human resource management system model (Three-point rating scale).

Part Three: Suggestions and additional comments (Open-ended).

The second version is a three-level estimation questionnaire that integrates the opinions of the first round of experts. The specific content is as follows:

Functions of Chinese university human resource management.

The third version is a three-level estimation questionnaire with the same content as the second round, including the corresponding indicator values of the second round scores.

Compilation process of expert questionnaires:

Step 1: Create the first round expert questionnaire.

Step 2: Invite 5 experts to test the Inter-Observer Consistency (IOC) of the expert questionnaire.

Step 3: Modify the expert questionnaire based on expert suggestions.

Step 4: Distribute the expert questionnaire to 21 experts.

Step 5: After collecting feedback on the questionnaire, draft the second and the third round expert questionnaire.

Step 6: Conduct the remaining two rounds of expert questionnaires (methods similar to the first five steps).

Step 7: Summarize the opinions of the three rounds of experts and derive the model for AI-supported Chinese university human resource management.

Data Collection

The researchers collected data based on the research tools. The specific steps were as follows:

1. Design and compile an expert questionnaire to identify a list of 21 experts who would participate in the three rounds of questioning.
2. Request the Graduate School of Bansomdejchaopraya Rajabhat University to send letters to collect responses from 21 experts.
3. Implement three rounds of expert opinion surveys and feedback.
4. Analyze expert opinions. After each round of expert feedback, gather opinions based on the content of the expert questionnaire to reach a consensus.

Data Analysis

Utilize descriptive statistical methods for statistical analysis of research data.

Phase 3: To evaluate the decision making model for Chinese universities human resource management in Sichuan

Apply the Expert Interviews Method to achieve Objective 3.

Population

Using Targeted Sampling method, select 9 experts with extensive experience in the field of human resource information management in Chinese universities in Sichuan, including 3 HR personnel, 3 information technology professionals, 3 IT managers or university administrators.

The qualifications of these 9 experts are as follows:

1. Over 15 years of work experience.
2. Technology professionals should hold advanced professional titles or doctoral degrees.
3. Managers should hold positions such as university administrators or heads of administrative departments.
4. Possess substantial experience in the use of digital technologies.

To ensure the scientific rigor and effectiveness of model evaluation in phase 3, the population and sample group in phase 3 should be distinct from those in phase 1 and phase 2, consisting of experts with higher professional and technical expertise and richer experience. Due to the relatively limited number of qualified individuals, it is advisable to reduce the sample group size appropriately, and the assessment opinions of 9 experts suffice to achieve the research objectives.

Research Instrument

Interview Outlines

Develop detailed interview outlines, including questions and topics, to guide the interview process. The interview content should cover all aspects of the model designed in this research.

Data Collection

The data collection process proceeds as follows:

Step 1: Identify 9 interview experts.

Step 2: Develop detailed interview outlines.

Step 3: Invite 5 experts to test the inter-observer consistency index (IOC) of the interview outlines and refine the outlines based on expert feedback.

Step 4: Conduct face-to-face or remote expert interviews. During the interviews, researcher will guide experts in assessing the model established in this research based on the CIPP evaluation model to gather their perspectives, opinions, and experiences.

Step 5: Record the interview content using recording devices, capturing key insights, questions, and recommendations.

Step 6: Summarize and organize expert opinions, and draft an expert interview report.

Data Analysis

Based on the records and report of the expert interviews, analyze the extent to which they accept the feasibility of the research model. Specific details include:

1. Expert interviews, led by the researcher, focus on evaluating the university human resource management decision making model.

2. Building on the findings from Objective 1 (researching current problems and resolutions of human resource management systems in Chinese universities), experts provide further insights into the human resource management decision making model for Chinese universities.

3. Experts, drawing on their professional backgrounds and work experiences, evaluate the human resource management decision making model for Chinese universities in Sichuan according to the four steps of the CIPP evaluation model, providing improvement suggestions for Objective 2 (developing a human resource management decision making model for Chinese universities in Sichuan).

4. Utilize descriptive statistical methods for statistical analysis of research data.

Summarize

This research is primarily divided into three phases, which will be completed sequentially in chronological order:

Phase One: Achieve Objective 1 through expert surveys, analyzing current problems and potential resolutions in Chinese university human resource management systems.

Phase Two: Achieve Objective 2 through the Delphi method, developing an optimized human resource management decision making model for Chinese universities.

Phase Three: Achieve Objective 3 through expert interviews, evaluating the effectiveness and viability of the human resource management decision making model for Chinese universities using the CIPP evaluation model.

Chapter 4

Results of analysis

In the research "Decision Making Model for Chinese Universities Human Resource Management in Sichuan," the researcher mainly conducted three phases to establish the model. The researcher collected and organized relevant data, and provided a detailed analysis and presentation of the research data, as follows:

Phase 1: To study current problems and resolutions on university human resource management system.

In this Phase, the researcher conducted an in-depth investigation and study of the current status of human resource management in Chinese universities through a literature review method. The researcher also employed an expert survey method, conducting questionnaire surveys with relevant experts, including human resource managers, information technology professionals, and university administrators from Chinese universities in Sichuan. Through the expert questionnaire, the researcher collected a significant amount of data and conducted a detailed analysis of the existing problems in human resource management for universities in Sichuan, along with potential improvement measures.

Phase 2: To design a decision making model for Chinese universities human resource management in Sichuan.

The main point of this phase was to establish a decision making model suitable for human resource management for Chinese universities in Sichuan. Through the Delphi method and multiple rounds of expert questionnaires, a decision making model for Chinese universities human resource management in Sichuan was ultimately determined. This Phase of the research was crucial for designing a scientifically effective decision making model for Chinese universities human resource management in Sichuan.

Phase 3: To evaluate the decision making model for Chinese universities human resource management in Sichuan.

Finally, the researcher comprehensively evaluated the effectiveness and feasibility of the designed decision making model for Chinese universities human resource management in Sichuan through expert interviews. Based on expert opinions, the researcher optimized and refined the model, which was crucial for finalizing the model's design.

Symbol and Abbreviations

Md refers to the Median

Mo refers to the Mode

IQR refers to the Inter-Quartile Range

Phase 1: To study current problems and resolutions on university human resource management system.

Through literature research, the researcher identified the problems and resolutions on human resource management in Chinese universities. These findings were further validated through expert surveys. The composition of the 21 respondents is detailed in Table 4.1.

Table 4.1 Composition of respondents (n=21)

No.	Component categories	Number of people	Percentage
1	Human resource management personnel	7	33.33
2	Information technology professional	7	33.33
3	Information technology manager or university administrator	7	33.33
Total		21	100.00

According to Table 4.1, 21 respondents covered university human resource management stakeholders. Among them, there are 7 human resource management personnel, accounting for 33.33%; 7 information technology professionals, accounting for 33.33%; 7 information technology managers or university administrators, accounting for 33.33%.

The personal information of human resource management personnel including gender, position, educational qualifications, working years, etc., is shown in Table 4.2.

Table 4.2 Human resource management personnel's personal information (n=7)

Item	Personal Information	Number of people	Percentage
Gender	Male	5	71.43
	Female	2	28.57
	Total	7	100.00
Position	General Staff	4	57.14
	Administrator	3	42.86
	Total	7	100.00
Educational qualification	Bachelor Degree or below	2	28.57
	Master degree	2	28.57
	Doctor degree	3	42.86
	Total	7	100.00
Working years	10-20 yrs	4	57.14
	20-25 yrs	2	28.57
	Over 25 yrs	1	14.29
	Total	7	100.00

According to Table 4.2, the demographic data of the human resource management personnel respondents indicate that the researchers selected

individuals of different genders, positions, educational backgrounds, and years of work experience as survey samples. Among them, males outnumber females, accounting for 71.43%. In terms of positions, there were 4 general staff members, constituting 57.14%, and 3 managers, constituting 42.86%. Regarding educational background, 2 individuals had undergraduate or lower degrees and 2 had master's degrees, each comprising 28.57%, while 3 had doctoral degrees, accounting for 42.86%. In terms of work experience, all sampled individuals had over 10 years of experience, with the majority (57.14%) having between 10 and 20 years, 2 (28.57%) having between 20 and 25 years, and 1 (14.29%) having over 25 years of experience.

The personal information of information technology professionals including gender, educational qualifications, professional title, working years, etc., is shown in Table 4.3.

Table 4.3 Information technology professionals' personal information (n=7)

Item	Personal Information	Number of people	Percentage
Gender	Male	4	57.14
	Female	3	42.86
	Total	7	100.00
Educational qualification	Master degree	1	14.29
	Doctor degree	6	85.71
	Total	7	100.00
Professional Title	Lecturer	4	57.14
	Associate Professor	2	28.57
	Professor	1	14.29
	Total	7	100.00
Working years	10-20 yrs	5	71.43
	20-25 yrs	1	14.29
	Over 25 yrs	1	14.28
	Total	7	100.00

According to Table 4.3, the demographic data of the information technology professional respondents indicate that the gender ratio is relatively balanced, with males slightly higher at 57.14%. In terms of educational background, all respondents held postgraduate degrees or higher, with doctoral degrees being predominant at 85.71%, accounting for 6 individuals. Regarding academic titles, there were 4 lecturers (57.14%), 2 associate professors (28.57%), and 1 professor (14.29%). In terms of work experience, all respondents had over 10 years of experience, with the majority (71.43%) having between 10 and 20 years, and 1 respondent each (14.29%) having between 20-25 years and over 25 years of experience.

The personal information of information technology managers or university administrators including gender, position, educational qualification, professional title, working years, etc., is shown in Table 4.4.

Table 4.4 Information technology managers or university administrators personal information (n=7)

Item	Personal Information	Number of people	Percentage
Gender	Male	7	100.00
	Female	0	0.00
	Total	7	100.00
Position	Information technology manager	4	57.14
	University administrator	3	42.86
	Total	7	100.00
Educational qualification	Master degree	1	14.29
	Doctor degree	6	85.71
	Total	7	100.00

Table 4.4 (Continued)

Item	Personal Information	Number of people	Percentage
Professional Title	Lecturer	1	14.29
	Professor	6	85.71
	Total	7	100.00
Working years	10-20 yrs	2	28.57
	20-25 yrs	2	28.57
	Over 25 yrs	3	42.86
	Total	7	100.00

According to Table 4.4, the demographic data of information technology managers or university administrators respondents indicate that all respondents were male. The distribution between information technology managers and university administrators was relatively even, with 4 individuals and 3 individuals respectively, accounting for 57.14% and 42.86%. All respondents held postgraduate degrees or higher, with the vast majority (85.71%) holding doctoral degrees, totaling 6 individuals. In terms of academic titles, 6 respondents were professors (85.71%), and 1 respondent was a lecturer (14.29%). Regarding work experience, there were 2 individuals each with 10-20 years and 20-25 years of experience, each accounting for 28.57%, while a relatively larger proportion (42.86%) had over 25 years of experience.

1. Results for Round 1: Current problems and resolutions on university human resource management system

Through literature review, it was identified that there are five existing problems in the current human resource management systems of Chinese universities. These findings were subsequently validated through an expert questionnaire survey. The current problems in university human resource management systems in China include: the data management organization and policy standards need to be unified, the

application of big data technology needs to be strengthened, the application of information technology needs to be deepened, Database technology needs to be improved, and the application of artificial intelligence technology needs to be enhanced. These findings are detailed in Table 4.5.

Table 4.5 Problems on university human resource management system in China (n=21)

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The data management organization and policy standards need to be unified						
1	Difficulties in personnel information data exchange and data redundancy.	17 (80.95%)	3 (14.29%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
2	Incomplete recruitment data and difficult analysis affecting decision accuracy.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
3	Lack of training records and evaluation standards, making it hard to quantify investment and effectiveness.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
4	Inconsistent performance data standards and evaluation methods affecting fairness and accuracy.	16 (76.19%)	3 (14.29%)	2 (9.52%)	0 (0.00%)	0 (0.00%)
5	Lack of standardized job descriptions and demand analysis, leading to low hiring match rates.	20 (95.24%)	0 (0.00%)	1 (4.76%)	0 (0.00%)	0 (0.00%)

Table 4.5 (Continued)

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6	Compensation and benefits policies lack scientific basis and uniform standards, resulting in low fairness and satisfaction.	18 (85.71%)	3 (14.29%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
The application of big data technology needs to be strengthened						
7	Personnel information cannot extract effective insights and predictions.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
8	The recruitment process struggles to accurately match candidates, increasing time and cost.	19 (90.48%)	1 (4.76%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
9	Training plans lack personalization, with inefficient resource allocation and poor results.	17 (80.95%)	4 (19.05%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
10	Performance analysis relies on traditional methods, resulting in less scientific evaluations.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
11	Decisions on job requirements and position matching are not precise.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
12	Compensation and benefits policies lack precision, leading to low employee satisfaction.	18 (85.71%)	2 (9.52%)	1 (4.76%)	0 (0.00%)	0 (0.00%)

Table 4.5 (Continued)

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The application of information technology needs to be deepened						
13	Personnel information lacks data integration and real-time updates, resulting in low efficiency in information management.	19 (90.48%)	1 (4.76%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
14	Recruitment processes depend on manual methods, leading to low efficiency and poor user experience.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
15	Employee training lacks personalized needs analysis and course recommendations, resulting in poor training effectiveness.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
16	Performance evaluations rely on traditional methods, resulting in delayed and inaccurate data.	18 (85.71%)	2 (9.52%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
17	Integration methods for job demands and talent matching are outdated, leading to less scientific decision-making.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
18	Compensation and benefits management relies on manual processes and simple forms, affecting policy rationality and satisfaction.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table 4.5 (Continued)

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Database technology needs to be improved						
19	Information data storage efficiency is low, with slow query speeds.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
20	The recruitment database lacks flexibility and scalability, leading to delayed and inaccurate decision-making.	17 (80.95%)	3 (14.29%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
21	The training database cannot support complex recording and analysis, resulting in inefficient management.	16 (76.19%)	3 (14.29%)	2 (9.52%)	0 (0.00%)	0 (0.00%)
22	The performance database struggles to meet personalized needs, leading to unfair and inaccurate evaluations.	18 (85.71%)	3 (14.29%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
23	The job database is incomplete and inconsistent, resulting in unscientific decision-making.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
24	The compensation and benefits database has poor security, resulting in low employee trust.	14 (66.67%)	6 (28.57%)	1 (4.76%)	0 (0.00%)	0 (0.00%)

Table 4.5 (Continued)

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The application of artificial intelligence technology needs to be enhanced						
25	Lack of analytical and predictive capabilities, unable to automatically extract personnel information and trends.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
26	Recruitment processes cannot automatically filter and match, resulting in low efficiency and accuracy.	17 (80.95%)	3 (14.29%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
27	Lack of personalized learning recommendations, unable to automatically suggest suitable courses.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
28	Performance evaluations lack intelligent analysis and recognition, resulting in shallow and unscientific results.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
29	Lack of intelligent job demand analysis and talent matching, leading to unscientific and inaccurate decision-making.	18 (85.71%)	2 (9.52%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
30	Inability to intelligently optimize compensation and benefits management, affecting policy precision and satisfaction.	17 (80.95%)	2 (9.52%)	2 (9.52%)	0 (0.00%)	0 (0.00%)

Based on Table 4.5, it reflects responses from 21 expert respondents on Part 1 of the questionnaire, addressing the main problems in Human Resource Management for Chinese universities in Sichuan. Among them, all 30 issues were recognized by the experts. These problems encompass six aspects: "Personnel Information Management," "Personnel Recruitment Management," "Personnel Development Management," "Performance Assessment Management," "Internal Promotion Management," and "Compensation and Benefits Management." The questions in this part were quantitatively posed, with respondents indicating their opinions on each issue using a scale ranging from Strongly Agree to Strongly Disagree.

For "Personnel Information Management," 100.00% of respondents strongly agree that personnel information lacks effective insights and predictive capabilities. Over 90.00% strongly agree that there is a lack of data integration and real-time updates, resulting in low efficiency in information management, slow data storage and retrieval, and insufficient analytical and predictive capabilities. More than 80.00% strongly agree that there are difficulties in exchanging personnel information data and redundancy in information.

For "Personnel Recruitment Management," 100.00% of respondents strongly agree that the recruitment process relies on manual methods, leading to low efficiency and poor user experience. Over 90.00% strongly agree that recruitment information is incomplete and difficult to analyze, affecting decision-making accuracy, and that the recruitment process struggles to accurately match candidates, thus increasing time and costs. More than 80.00% strongly agree that the recruitment database lacks flexibility and scalability, resulting in untimely and inaccurate decision-making, as well as inefficient and imprecise candidate screening.

For "Personnel Development Management," over 90.00% of respondents strongly agree that there is a lack of standards for training records and assessment, making it difficult to quantify investments and outcomes. They also indicate that employee training lacks personalized needs analysis and course recommendations, leading to poor training effectiveness. More than 80.00% strongly agree that training programs are insufficiently personalized, resource allocation is inefficient, and the

overall effectiveness is low. Over 70.00% strongly agree that the training database cannot support complex record keeping and analysis, resulting in ineffective management.

For "Performance Assessment Management," over 90.00% of respondents strongly agree that performance analysis relies on traditional methods, which adversely affects the scientific rigor of evaluations. They also note that performance assessments lack intelligent analysis and identification, thus lacking depth and scientific validity in results. More than 80.00% strongly agree that performance evaluation relies on traditional methods, resulting in untimely and inaccurate data, and that the performance database struggles to meet personalized needs, leading to unjust and inaccurate evaluations. Over 70.00% strongly agree that performance standards and evaluation methods lack uniformity, affecting the fairness and accuracy of evaluations.

For "Internal Promotion Management," over 90.00% of respondents strongly agree that standards for job descriptions and demand analysis are lacking, resulting in low job-to-candidate match rates. They also indicate that decision-making regarding job demands and talent matching lacks precision due to outdated integration tools and incomplete and inconsistent job databases. More than 80.00% strongly agree that there is a lack of intelligent job demand analysis and talent matching, leading to scientifically inaccurate decision-making.

For "Compensation and Benefits Management," over 90.00% of respondents strongly agree that compensation and benefits management relies on manual processes and simple spreadsheets, which adversely affect the scientific basis and satisfaction of policies. Over 80.00% strongly agree that compensation and benefits policies lack scientific foundations and uniform standards, resulting in low fairness and satisfaction. They also indicate that the precision of compensation and benefits policies and employee satisfaction are low, and that compensation and benefits management cannot be intelligently optimized, affecting policy accuracy and satisfaction. More than 60.00% of respondents strongly agree that the security of compensation and benefits databases is poor, leading to low employee trust.

The current problems in Chinese university human resource management systems can be attributed to several factors. Firstly, the data management organization and policy standards need to be unified may stem from organizational complexity or inadequate measures for data security and privacy protection. Secondly, the application of big data technology needs to be strengthened may result from the lack of efficient tools for analyzing and mining large datasets, or complexities and time constraints in data integration and cleansing processes. Thirdly, inadequate depth of Information Technology application could be due to aging or insufficient technological infrastructure, especially in the slow adoption of emerging technologies. Fourthly, Database technology needs to be improved may involve issues with inefficient data storage and retrieval, or concerns with data consistency and integrity. Lastly, the application of artificial intelligence technology needs to be enhanced may be due to the lack of tailored AI solutions for human resource management, or insufficient awareness of the potential of AI technologies.

Table 4.6 The data management organization and policy standards need to be unified (n=21)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Establish and promote unified personnel information storage standards and data formats to ensure smooth data exchange between departments and reduce information redundancy.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table 4.6 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2	Implement data quality management mechanisms to ensure data accuracy and completeness, reducing information redundancy and errors.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
3	Standardize candidate information collection in the recruitment process to ensure completeness and consistency, enhancing data quality and analysis reliability.	16 (76.19%)	3 (14.29%)	1 (4.76%)	1 (4.76%)	0 (0.00%)
4	Enhance data management for employee training records, establish comprehensive archives of training data to quantify and compare the effectiveness of different training programs.	13 (61.90%)	6 (28.57%)	2 (9.52%)	0 (0.00%)	0 (0.00%)

Table 4.6 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	Design evaluation standards for training effectiveness, incorporating pre- and post-training skill assessments and job performance evaluations to objectively assess the impact and value of training.	17 (80.95%)	2 (9.52%)	2 (9.52%)	0 (0.00%)	0 (0.00%)
6	Develop unified standards for performance data collection and evaluation methods to ensure consistency and accuracy in performance evaluations.	18 (85.71%)	3 (14.29%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
7	Establish detailed and unified job description standards, introduce job requirement analysis tools or systems to facilitate accurate matching of recruitment needs and actual positions, reducing failure rates.	12 (57.14%)	6 (28.57%)	3 (14.29%)	0 (0.00%)	0 (0.00%)

Table 4.6 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8	Regularly update and review job descriptions to ensure alignment with organizational development and talent needs, enhancing efficiency and accuracy in job appointments.	17 (80.95%)	3 (14.29%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
9	Establish a data system conducive to scientifically formulating compensation and benefits policies to ensure fairness in benefits and enhance employee satisfaction.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
10	Develop unified compensation and benefits standards and processes to ensure policy transparency and consistency, preventing unfair practices and improving employee acceptance and satisfaction with benefits policies.	11 (52.38%)	7 (33.33%)	3 (14.29%)	0 (0.00%)	0 (0.00%)

According to Table 4.6, the responses to scale questions 31 to 40 from the 21 experts are reflected. Based on the analysis of the frequency and percentage of strongly agree responses among experts, the top three resolutions for addressing the current problem of “The data management organization and policy standards need to be unified” are as follows: establish and promote unified personnel information storage standards and data formats to ensure smooth data exchange between departments and reduce information redundancy, implement data quality management mechanisms to ensure data accuracy and completeness, reducing information redundancy and errors, establish a data system conducive to scientifically formulating compensation and benefits policies to ensure fairness in benefits and enhance employee satisfaction, with the agreement of 100.00%, 100.00%, and 95.24%. The bottom three resolutions in terms of expert agreement are: develop unified compensation and benefits standards and processes to ensure policy transparency and consistency, preventing unfair practices and improving employee acceptance and satisfaction with benefits policies, establish detailed and unified job description standards, introduce job requirement analysis tools or systems to facilitate accurate matching of recruitment needs and actual positions, reducing failure rates, enhance data management for employee training records, establish comprehensive archives of training data to quantify and compare the effectiveness of different training programs, with the agreement of 52.38%, 57.14%, and 61.90%.

Table 4.7 The application of big data technology needs to be strengthened (n=21)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11	Introducing big data analytics platforms or tools to extract talent insights and predictive analytics from vast amounts of data helps identify potential high-value talents.	19 (90.48%)	1 (4.76%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
12	Integrating data from various sources facilitates comprehensive talent information integration and exploration.	16 (76.19%)	3 (14.29%)	2 (9.52%)	0 (0.00%)	0 (0.00%)
13	Utilizing big data analytics technology for intelligent candidate screening and matching enhances recruitment precision and efficiency.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
14	Implementing data-driven recruitment decision strategies analyzes recruitment data to optimize processes and resource allocation, reducing recruitment cycles and costs.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table 4.7 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
15	Providing personalized training recommendations and course suggestions based on employees' skills and career development needs using big data analysis.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
16	Analyzing training effectiveness and employee performance data to adjust and optimize personalized training plans maximizes training resource utilization and significantly improves training effectiveness.	13 (61.90%)	3 (14.29%)	4 (19.05%)	1 (4.76%)	0 (0.00%)
17	Using big data technology to analyze multidimensional employee performance data and trends provides objective, accurate performance evaluations and recommendations.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table 4.7 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
18	Establishing real-time data monitoring and feedback mechanisms enables managers to track and adjust performance evaluation processes promptly, ensuring fairness and transparency.	19 (90.48%)	1 (4.76%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
19	Introducing intelligent job demand analysis tools combined with big data analysis identifies and forecasts future job demand trends, enhancing the scientific accuracy and precision of job appointment decisions.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
20	Implementing data-driven job matching automates recommending the best-matched candidates based on job requirements and employee skill characteristics, optimizing job appointment efficiency and quality.	17 (80.95%)	3 (14.29%)	1 (4.76%)	0 (0.00%)	0 (0.00%)

Table 4.7 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
21	Analyzing compensation data and employee benefit preferences using big data analysis tools to formulate scientifically-based compensation and benefits policies improves policy accuracy and employee satisfaction.	13 (61.90%)	5 (23.81%)	3 (14.29%)	0 (0.00%)	0 (0.00%)
22	Establishing dynamic adjustment mechanisms monitors the execution effectiveness and employee feedback of compensation and benefits policies through big data analysis, enabling timely strategy adjustments to maintain effectiveness and adaptability.	17 (80.95%)	2 (9.52%)	1 (4.76%)	1 (4.76%)	0 (0.00%)

According to Table 4.7, the responses to scale questions 41 to 52 from the 21 experts are reflected. Based on the analysis of the frequency and percentage of strongly agree responses among experts, the top three resolutions for addressing the current problem of “The application of big data technology needs to be

strengthened” are as follows: providing personalized training recommendations and course suggestions based on employees' skills and career development needs using big data analysis, using big data technology to analyze multidimensional employee performance data and trends provides objective, accurate performance evaluations and recommendations, implementing data-driven recruitment decision strategies analyzes recruitment data to optimize processes and resource allocation, reducing recruitment cycles and costs, with the agreement of 100.00%, 100.00%, and 95.24%. The bottom three resolutions in terms of expert agreement are: analyzing compensation data and employee benefit preferences using big data analysis tools to formulate scientifically-based compensation and benefits policies improves policy accuracy and employee satisfaction, analyzing training effectiveness and employee performance data to adjust and optimize personalized training plans maximizes training resource utilization and significantly improves training effectiveness, integrating data from various sources facilitates comprehensive talent information integration and exploration, with the agreement of 61.90%, 61.90%, and 76.19%.

Table 4.8 The application of information technology needs to be deepened (n=21)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
23	Implementing comprehensive human resources information management ensures support for multiple data sources and real-time updates, enhancing efficiency and accuracy in information management.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table 4.8 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
24	Deploying a complete recruitment management system integrates various online resources to improve recruitment efficiency and candidate experience.	12 (57.14%)	6 (28.57%)	3 (14.29%)	0 (0.00%)	0 (0.00%)
25	Introducing artificial intelligence and big data analytics automate candidate screening and matching, reducing manual operations and enhancing the scientific accuracy and precision of recruitment decisions.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
26	Implementing intelligent employee learning management integrates employee skill profiles and career development plans to provide personalized training needs analysis and course recommendations.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table 4.8 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
27	Introducing advanced digital technologies provides immersive learning experiences and practical environments, enhancing training interactivity and attractiveness.	11 (52.38%)	7 (33.33%)	3 (14.29%)	0 (0.00%)	0 (0.00%)
28	Establishing a performance evaluation management system that supports diverse evaluation methods and customized evaluation criteria improves the accuracy and timeliness of evaluation data.	12 (57.14%)	5 (23.81%)	4 (19.05%)	0 (0.00%)	0 (0.00%)
29	Using big data technology to analyze employee performance data identifies trends and optimization suggestions, enhancing the objectivity and scientific nature of the evaluation process.	18 (85.71%)	2 (9.52%)	1 (4.76%)	0 (0.00%)	0 (0.00%)

Table 4.8 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
30	Implementing intelligent talent management combines big data analytics to automatically match the best candidates for different positions, enhancing the scientific accuracy and precision of recruitment decisions.	19 (90.48%)	1 (4.76%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
31	Using intelligent analysis tools to quickly and accurately understand and respond to recruitment needs optimizes recruitment processes and reduces human resource management costs.	13 (61.90%)	4 (19.05%)	4 (19.05%)	0 (0.00%)	0 (0.00%)
32	Implementing integrated compensation and benefits management supports various benefit schemes and flexible benefit options, enhancing the scientific	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table 4.8 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	nature of compensation and benefits policies and employee satisfaction.					
33	Introducing intelligent compensation analysis tools optimizes compensation based on data-driven decisions, increasing organizational attractiveness and retention rates for talent.	17 (80.95%)	2 (9.52%)	2 (9.52%)	0 (0.00%)	0 (0.00%)

According to Table 4.8, the responses to scale questions 53 to 63 from the 21 experts are summarized. Based on the analysis of the frequency and percentage of strongly agree responses among experts, the top three resolutions for addressing the current problem of “The application of information technology needs to be deepened” are as follows: implementing comprehensive human resources information management ensures support for multiple data sources and real-time updates, enhancing efficiency and accuracy in information management, introducing artificial intelligence and big data analytics automate candidate screening and matching, reducing manual operations and enhancing the scientific accuracy and precision of recruitment decisions, implementing intelligent employee learning management integrates employee skill profiles and career development plans to provide personalized training needs analysis and course recommendations, with the agreement of 100.00%, 100.00%, and 95.24%. The bottom three resolutions in terms of expert agreement are: introducing advanced digital technologies provides

immersive learning experiences and practical environments, enhancing training interactivity and attractiveness, establishing a performance evaluation management system that supports diverse evaluation methods and customized evaluation criteria improves the accuracy and timeliness of evaluation data, deploying a complete recruitment management system integrates various online resources to improve recruitment efficiency and candidate experience, with the agreement of 52.38%, 57.14%, and 57.14%.

Table 4.9 Database technology needs to be improved (n=21)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
34	Redesign and optimize the database system to improve data storage efficiency and query speed.	9 (42.86%)	8 (38.10%)	3 (14.29%)	1 (4.76%)	0 (0.00%)
35	Introduce caching mechanisms and optimize indexing to reduce data retrieval time, enhancing real-time information management efficiency.	17 (80.95%)	4 (19.05%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
36	Develop customized recruitment modules to allow quick configuration and adjustment of recruitment processes to meet changing recruitment needs and data growth.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table 4.9 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
37	Implement comprehensive learning management to support recording and managing various forms of training.	8 (38.10%)	7 (33.33%)	5 (23.81%)	1 (4.76%)	0 (0.00%)
38	Conduct in-depth analysis of training data through data analysis tools to evaluate training effectiveness and optimize resource allocation.	16 (76.19%)	3 (14.29%)	2 (9.52%)	0 (0.00%)	0 (0.00%)
39	Update performance evaluation systems to support customized evaluation metrics and scoring criteria, adapting to specific needs of different departments and positions.	13 (61.90%)	5 (23.81%)	3 (14.29%)	0 (0.00%)	0 (0.00%)
40	Introduce flexible evaluation modules to allow adjustment and optimization of evaluation processes, enhancing fairness and accuracy of evaluation results.	16 (76.19%)	3 (14.29%)	2 (9.52%)	0 (0.00%)	0 (0.00%)

Table 4.9 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
41	Unified job description and position requirement management to ensure integrity and consistency in information input and updates.	10 (47.62%)	7 (33.33%)	4 (19.05%)	0 (0.00%)	0 (0.00%)
42	Implement automated data validation and audit mechanisms to promptly identify and correct inaccuracies, improving the scientific accuracy and precision of hiring decisions.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
43	Strengthen security measures of the compensation and benefits database, including data encryption, access control, and real-time monitoring.	16 (76.19%)	3 (14.29%)	2 (9.52%)	0 (0.00%)	0 (0.00%)
44	Implement regular data backup and recovery strategies to mitigate risks of accidental data loss or damage, enhancing reliability of compensation and benefits management and employee trust.	5 (23.81%)	8 (38.10%)	6 (28.57%)	2 (9.52%)	0 (0.00%)

According to Table 4.9, the responses to scale questions 64 to 74 from the 21 experts are summarized. Based on the analysis of the frequency and percentage of strongly agree responses among experts, the top three resolutions for addressing the current problem of “Database technology needs to be improved” are as follows: implement automated data validation and audit mechanisms to promptly identify and correct inaccuracies, improving the scientific accuracy and precision of hiring decisions, develop customized recruitment modules to allow quick configuration and adjustment of recruitment processes to meet changing recruitment needs and data growth, introduce caching mechanisms and optimize indexing to reduce data retrieval time, enhancing real-time information management efficiency, with the agreement of 100.00%, 90.48%, and 80.95%. The bottom three resolutions in terms of expert agreement are: implement regular data backup and recovery strategies to mitigate risks of accidental data loss or damage, enhancing reliability of compensation and benefits management and employee trust, implement comprehensive learning management to support recording and managing various forms of training, redesign and optimize the database system to improve data storage efficiency and query speed, with the agreement of 23.81%, 38.10%, and 42.86%.

Table 4.10 The application of artificial intelligence technology needs to be enhanced (n=21)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
45	Introducing artificial intelligence and machine learning algorithms to analyze talent information in big data, extract key talent	17 (80.95%)	3 (14.29%)	1 (4.76%)	0 (0.00%)	0 (0.00%)

Table 4.10 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	characteristics and trend analysis, supporting talent prediction and strategic planning.					
46	Introducing intelligent talent analysis tools, integrating natural language processing (NLP) and data mining technology, automating the identification and evaluation process of key talents.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
47	Implementing intelligent personnel recruitment management to achieve automatic resume screening and smart matching of candidates, improving recruitment efficiency and accuracy.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
48	Developing machine learning-based recruitment recommendation engines to automatically recommend the best-matched candidates	16 (76.19%)	3 (14.29%)	2 (9.52%)	0 (0.00%)	0 (0.00%)

Table 4.10 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	on job requirements and candidate skills and experience based.					
49	Implementing intelligent learning management to personalize recommendations for suitable training courses and learning paths based on employees' learning history, interests, and abilities.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
50	Combining data analysis to continuously optimize learning content and resource allocation, enhancing training effectiveness and employee development quality.	15 (71.54%)	2 (9.52%)	3 (14.29%)	1 (4.76%)	0 (0.00%)
51	Introducing artificial intelligence algorithms to analyze performance data, identify and predict performance patterns, uncover hidden performance trends, and associated factors.	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Table 4.10 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
52	Using machine learning technology to establish personalized performance evaluation models, supporting fair evaluations across departments and positions, and providing real-time feedback and improvement suggestions.	18 (85.71%)	3 (14.29%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
53	Introducing intelligent job demand analysis tools to automatically match job requirements with candidate skills and experience using big data and machine learning.	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
54	Combining data mining technology to analyze historical recruitment data and successful cases, optimizing the recruitment decision-making process to enhance scientific accuracy and precision.	7 (33.33%)	6 (28.57%)	6 (28.57%)	2 (9.52%)	0 (0.00%)

Table 4.10 (Continued)

No.	Resolution	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
55	Introducing intelligent compensation management, combining machine learning and predictive analytics to automatically identify salary inequalities and potential welfare optimization opportunities.	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
56	Introducing intelligent compensation adjustment tools to automatically recommend fair and reasonable salary adjustment plans based on performance data, enhancing employee satisfaction and system accuracy.	18 (85.71%)	2 (9.52%)	1 (4.76%)	0 (0.00%)	0 (0.00%)

According to Table 4.10, the responses to scale questions 75 to 86 from the 21 experts are summarized. Based on the analysis of the frequency and percentage of strongly agree responses among experts, the top three resolutions for addressing the current problem of “The application of artificial intelligence technology needs to be enhanced” are as follows: implementing intelligent personnel recruitment management to achieve automatic resume screening and smart matching of

candidates, improving recruitment efficiency and accuracy, introducing intelligent job demand analysis tools to automatically match job requirements with candidate skills and experience using big data and machine learning, introducing artificial intelligence algorithms to analyze performance data, identify and predict performance patterns, uncover hidden performance trends, and associated factors, with the agreement of 100.00%, 100.00%, and 95.24%. The bottom three resolutions in terms of expert agreement are: combining data mining technology to analyze historical recruitment data and successful cases, optimizing the recruitment decision-making process to enhance scientific accuracy and precision, combining data analysis to continuously optimize learning content and resource allocation, enhancing training effectiveness and employee development quality, developing machine learning-based recruitment recommendation engines to automatically recommend the best-matched candidates based on job requirements and candidate skills and experience, with the agreement of 33.33%, 71.43%, and 76.19%.

Table 4.11 Factors affecting Personnel Information Management (n=21)

	Factor	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Unified data management standards	10 (47.62%)	4 (19.05%)	4 (19.05%)	2 (9.52%)	1 (4.76%)
2	Complete data storage	17 (80.95%)	2 (9.52%)	2 (9.52%)	0 (0.00%)	0 (0.00%)
3	Accurate data recording	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
4	Smooth data sharing	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
5	Secure data management	9 (42.86%)	6 (28.57%)	4 (19.05%)	1 (4.76%)	1 (4.76%)

According to Table 4.11, it presents the responses of 21 experts to scale questions 87 to 91. Based on expert feedback, among the five factors that may affect Personnel Information Management, "Smooth data sharing" has the highest agreement, with 100.00% strongly agree. In contrast, "Secure data management" has the lowest agreement, with 42.86% strongly agree.

Table 4.12 Factors affecting Personnel Recruitment Management (n=21)

	Factor	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6	Personalized recruitment process	7 (33.33%)	6 (28.57%)	4 (19.05%)	3 (14.29%)	1 (4.76%)
7	Intelligent recruitment strategies	19 (90.48%)	2 (9.52%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
8	Unified data storage management	9 (42.86%)	5 (23.81%)	4 (19.05%)	2 (9.52%)	1 (4.76%)
9	Automated recruitment process implementation	15 (71.43%)	4 (19.05%)	2 (9.52%)	0 (0.00%)	0 (0.00%)
10	Intelligent candidate matching and screening	16 (76.19%)	3 (14.29%)	2 (9.52%)	0 (0.00%)	0 (0.00%)

According to Table 4.12, it presents the responses of 21 experts to scale questions 92 to 96. Based on expert feedback, among the five factors that may affect Personnel Recruitment Management, "Intelligent recruitment strategies" and "Intelligent candidate matching and screening" have the highest agreement, with 90.48% strongly agree. In contrast, "Personalized recruitment process" has the lowest agreement, with only 33.33% strongly agree.

Table 4.13 Factors affecting Personnel Development Management (n=21)

	Factor	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11	Investment in information technology resources	11 (52.38%)	3 (14.29%)	3 (14.29%)	3 (14.29%)	1 (4.76%)
12	Identification of training needs	19 (90.48%)	1 (4.76%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
13	Personalized development of training plans	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
14	Reasonable allocation of resources	18 (85.71%)	2 (9.52%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
15	Targeted guidance	12 (57.14%)	2 (9.52%)	3 (14.29%)	4 (19.05%)	0 (0.00%)

According to Table 4.13, it shows the responses of 21 experts to scale questions 97 to 101. Based on expert feedback, among the five factors that may affect Personnel Development Management, "Personalized development of training plans" has the highest agreement, with 100.00% strongly agree. In contrast, "Investment in information technology resources" has the lowest agreement, with 52.38% strongly agree.

Table 4.14 Factors affecting Performance Assessment Management (n=21)

	Factor	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
16	Intelligent performance assessment	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
17	Accurate data management	10 (47.62%)	4 (19.05%)	5 (23.81%)	2 (9.52%)	0 (0.00%)
18	In-depth analysis of performance data	17 (80.95%)	3 (14.29%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
19	Unified assessment standards	7 (33.33%)	6 (28.57%)	4 (19.05%)	3 (14.29%)	1 (4.76%)
20	Sound feedback mechanism	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

According to Table 4.14, it displays the responses of 21 experts to scale questions 102 to 106. Based on expert feedback, among the five factors that may affect Performance Assessment Management, "Sound feedback mechanism" has the highest agreement, with 100.00% strongly agree. In contrast, "Unified assessment standards" has the lowest agreement, with 33.33% strongly agree.

Table 4.15 Factors affecting Internal Promotion Management (n=21)

	Factor	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
21	Unified hiring criteria	16 (76.19%)	3 (14.29%)	2 (9.52%)	0 (0.00%)	0 (0.00%)
22	Complete data information	8 (38.10%)	6 (28.57%)	3 (14.29%)	3 (14.29%)	1 (4.76%)
23	Intelligent job matching	19 (90.48%)	1 (4.76%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
24	Transparent decision-making process	10 (47.62%)	4 (19.05%)	5 (23.81%)	2 (9.52%)	0 (0.00%)
25	Clear promotion channels	18 (85.71%)	1 (4.76%)	2 (9.52%)	0 (0.00%)	0 (0.00%)

According to Table 4.15, it presents the responses of 21 experts to scale questions 107 to 111. Based on expert feedback, among the five factors that may affect Internal Promotion Management, "Intelligent job matching" has the highest agreement, with 90.48% strongly agree. In contrast, "Complete data information" has the lowest agreement, with 38.10% strongly agree.

Table 4.16 Factors affecting Compensation and Benefits Management (n=21)

	Factor	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
26	Centralized unified data management	7 (33.33%)	5 (23.81%)	5 (23.81%)	3 (14.29%)	1 (4.76%)
27	Intelligent analysis of compensation and benefits	20 (95.24%)	1 (4.76%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
28	Personalized incentive measures	21 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
29	Intelligent policy analysis	18 (85.71%)	2 (9.52%)	1 (4.76%)	0 (0.00%)	0 (0.00%)
30	Fair compensation and benefits system	8 (38.10%)	4 (19.05%)	5 (23.81%)	3 (14.29%)	1 (4.76%)

According to Table 4.16, it shows the responses of 21 experts to scale questions 112 to 116. Based on expert feedback, among the five factors that may affect Compensation and Benefits Management, "Personalized incentive measures" has the highest agreement, with 100.00% strongly agree. In contrast, "Centralized unified data management" has the lowest agreement, with 33.33% strongly agree.

4.1.2 Results for Round 2: Results of median, mode, and inter-quartile range analysis of expert survey data on effective resolutions on university human resource management system.

Table 4.17 The data management organization and policy standards need to be unified

Item	Resolution	Md	Mo	IQR
1	Establish and promote unified personnel information storage standards and data formats to ensure smooth data exchange between departments and reduce information redundancy.	5.0	5	0.0
2	Implement data quality management mechanisms to ensure data accuracy and completeness, reducing information redundancy and errors.	5.0	5	0.0
3	Standardize candidate information collection in the recruitment process to ensure completeness and consistency, enhancing data quality and analysis reliability.	4.0	5	3.0
4	Enhance data management for employee training records, establish comprehensive archives of training data to quantify and compare the effectiveness of different training programs.	4.0	4	1.0
5	Design evaluation standards for training effectiveness, incorporating pre- and post-training skill assessments and job performance evaluations to objectively assess the impact and value of training.	4.5	5	2.0
6	Develop unified standards for performance data collection and evaluation methods to ensure consistency and accuracy in performance evaluations.	5.0	5	0.0
7	Establish detailed and unified job description standards, introduce job requirement analysis tools or systems to facilitate accurate matching of recruitment needs and actual positions, reducing failure rates.	4.0	4	1.0

Table 4.17 (Continued)

Item	Resolution	Md	Mo	IQR
8	Regularly update and review job descriptions to ensure alignment with organizational development and talent needs, enhancing efficiency and accuracy in job appointments.	5.0	5	2.0
9	Establish a data system conducive to scientifically formulating compensation and benefits policies to ensure fairness in benefits and enhance employee satisfaction.	5.0	5	0.0
10	Develop unified compensation and benefits standards and processes to ensure policy transparency and consistency, preventing unfair practices and improving employee acceptance and satisfaction with benefits policies.	4.0	4	1.0

According to Table 4.17, 9 of the 10 resolutions to unify the data management organization and policy standards showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating that 90.00% of the resolutions achieved a high degree of consensus. The opinions that I strongly agree with are as follows: item 1, 2, 6, 9 are all ($Md=5.0$, $Mo=5$, $IQR=0.0$); items 5, 8 ($IQR=2.0$) and item 4, 7, 10 ($Md=4.0$) among the moderate consensus resolutions, although most experts agree on these resolutions, there is still a degree of opinion Disagreement. Items 3 ($Md=4.0$, $IQR=3.0$) indicate that there are significant differences in opinions among the experts.

Table 4.18 The application of big data technology needs to be strengthened

Item	Resolution	Md	Mo	IQR
11	Introducing big data analytics platforms or tools to extract talent insights and predictive analytics from vast amounts of data helps identify potential high-value talents.	5.0	5	0.0
12	Integrating data from various sources facilitates comprehensive talent information integration and exploration.	4.0	5	2.0
13	Utilizing big data analytics technology for intelligent candidate screening and matching enhances recruitment precision and efficiency.	5.0	5	0.0
14	Implementing data-driven recruitment decision strategies analyzes recruitment data to optimize processes and resource allocation, reducing recruitment cycles and costs.	5.0	5	0.0
15	Providing personalized training recommendations and course suggestions based on employees' skills and career development needs using big data analysis.	5.0	5	0.0
16	Analyzing training effectiveness and employee performance data to adjust and optimize personalized training plans maximizes training resource utilization and significantly improves training effectiveness.	3.5	5	2.0
17	Using big data technology to analyze multidimensional employee performance data and trends provides objective, accurate performance evaluations and recommendations.	5.0	5	0.0

Table 4.18 (Continued)

Item	Resolution	Md	Mo	IQR
18	Establishing real-time data monitoring and feedback mechanisms enables managers to track and adjust performance evaluation processes promptly, ensuring fairness and transparency.	5.0	5	0.0
19	Introducing intelligent job demand analysis tools combined with big data analysis identifies and forecasts future job demand trends, enhancing the scientific accuracy and precision of job appointment decisions.	5.0	5	0.0
20	Implementing data-driven job matching automates recommending the best-matched candidates based on job requirements and employee skill characteristics, optimizing job appointment efficiency and quality.	5.0	5	2.0
21	Analyzing compensation data and employee benefit preferences using big data analysis tools to formulate scientifically-based compensation and benefits policies improves policy accuracy and employee satisfaction.	4.0	4	2.0
22	Establishing dynamic adjustment mechanisms monitors the execution effectiveness and employee feedback of compensation and benefits policies through big data analysis, enabling timely strategy adjustments to maintain effectiveness and adaptability.	4.0	5	3.0

According to Table 4.18, 8 of the 12 resolutions to strengthen the application of big data technology showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating that 66.67% of the resolutions achieved a high degree of consensus. The opinions that I strongly agree with are as follows: item 11, 13, 14, 15, 17, 18, 19 are all ($Md=5.0$, $Mo=5$, $IQR=0.0$); items 20 ($IQR=2.0$) among the moderate consensus resolutions, shows a degree of opinion Disagreement. Items 12 and 21 ($Md=4.0$, $IQR=2.0$), item 16 ($Md=3.5$, $IQR=2.0$), item 22 ($Md=4.0$, $IQR=3.0$) indicate that there are significant differences in opinions among the experts.

Table 4.19 The application of information technology needs to be deepened

Item	Resolution	Md	Mo	IQR
23	Implementing comprehensive human resources information management ensures support for multiple data sources and real-time updates, enhancing efficiency and accuracy in information management.	5.0	5	0.0
24	Deploying a complete recruitment management system integrates various online resources to improve recruitment efficiency and candidate experience.	4.0	4	1.0
25	Introducing artificial intelligence and big data analytics automate candidate screening and matching, reducing manual operations and enhancing the scientific accuracy and precision of recruitment decisions.	5.0	5	0.0
26	Implementing intelligent employee learning management integrates employee skill profiles and career development plans to provide personalized training needs analysis and course recommendations.	5.0	5	0.0

Table 4.19 (Continued)

Item	Resolution	Md	Mo	IQR
27	Introducing advanced digital technologies provides immersive learning experiences and practical environments, enhancing training interactivity and attractiveness.	4.0	4	1.0
28	Establishing a performance evaluation management system that supports diverse evaluation methods and customized evaluation criteria improves the accuracy and timeliness of evaluation data.	4.0	4	1.0
29	Using big data technology to analyze employee performance data identifies trends and optimization suggestions, enhancing the objectivity and scientific nature of the evaluation process.	5.0	5	0.0
30	Implementing intelligent talent management combines big data analytics to automatically match the best candidates for different positions, enhancing the scientific accuracy and precision of recruitment decisions.	5.0	5	0.0
31	Using intelligent analysis tools to quickly and accurately understand and respond to recruitment needs optimizes recruitment processes and reduces human resource management costs.	3.5	4	1.0
32	Implementing integrated compensation and benefits management supports various benefit schemes and flexible benefit options, enhancing the scientific nature of compensation and benefits policies and employee satisfaction.	5.0	5	0.0

Table 4.19 (Continued)

Item	Resolution	Md	Mo	IQR
33	Introducing intelligent compensation analysis tools optimizes compensation based on data-driven decisions, increasing organizational attractiveness and retention rates for talent.	4.5	5	2.0

According to Table 4.19, all the 11 resolutions to deepen the application of information technology showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating that 100.00% of the resolutions achieved a high degree of consensus. The opinions that I strongly agree with are as follows: item 23, 25, 26, 29, 30, 32 are all ($Md=5.0$, $Mo=5$, $IQR=0.0$); items 24, 27, 28 ($Md=4.0$), item 31 ($Md=3.5$), item 33 ($IQR=2.0$) among the moderate consensus resolutions, shows a degree of opinion Disagreement.

Table 4.20 Database technology needs to be improved

Item	Resolution	Md	Mo	IQR
34	Redesign and optimize the database system to improve data storage efficiency and query speed.	4.0	4	1.0
35	Introduce caching mechanisms and optimize indexing to reduce data retrieval time, enhancing real-time information management efficiency.	5.0	5	1.0
36	Develop customized recruitment modules to allow quick configuration and adjustment of recruitment processes to meet changing recruitment needs and data growth.	5.0	5	0.0
37	Implement comprehensive learning management to support recording and managing various forms of training.	3.5	4	2.0

Table 4.20 (Continued)

Item	Resolution	Md	Mo	IQR
38	Conduct in-depth analysis of training data through data analysis tools to evaluate training effectiveness and optimize resource allocation.	4.0	5	2.0
39	Update performance evaluation systems to support customized evaluation metrics and scoring criteria, adapting to specific needs of different departments and positions.	4.0	4	2.0
40	Introduce flexible evaluation modules to allow adjustment and optimization of evaluation processes, enhancing fairness and accuracy of evaluation results.	4.0	5	2.0
41	Unified job description and position requirement management to ensure integrity and consistency in information input and updates.	4.0	4	1.0
42	Implement automated data validation and audit mechanisms to promptly identify and correct inaccuracies, improving the scientific accuracy and precision of hiring decisions.	5.0	5	0.0
43	Strengthen security measures of the compensation and benefits database, including data encryption, access control, and real-time monitoring.	4.0	5	2.0
44	Implement regular data backup and recovery strategies to mitigate risks of accidental data loss or damage, enhancing reliability of compensation and benefits management and employee trust.	3.5	4	2.0

According to Table 4.20, 5 of the 11 resolutions to improve Database technology showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating that 45.45% of the resolutions achieved a high degree of consensus. The opinions that I strongly agree with are as follows: item 36, 42 are ($Md=5.0$, $Mo=5$, $IQR=0.0$), item 35 ($Md=5.0$, $Mo=5$, $IQR=1$); items 34 and 41 ($Md=4.0$) among the moderate consensus resolutions, shows a degree of opinion Disagreement. Items 38, 39, 40, 43 ($Md=4.0$, $IQR=2.0$), item 37, 44 ($Md=3.5$, $IQR=2.0$) indicate that there are significant differences in opinions among the experts.

Table 4.21 The application of artificial intelligence technology needs to be enhanced

Item	Resolution	Md	Mo	IQR
45	Introducing artificial intelligence and machine learning algorithms to analyze talent information in big data, extract key talent characteristics and trend analysis, supporting talent prediction and strategic planning.	5.0	5	2.0
46	Introducing intelligent talent analysis tools, integrating natural language processing (NLP) and data mining technology, automating the identification and evaluation process of key talents.	5.0	5	0.0
47	Implementing intelligent personnel recruitment management to achieve automatic resume screening and smart matching of candidates, improving recruitment efficiency and accuracy.	5.0	5	0.0
48	Developing machine learning-based recruitment recommendation engines to automatically recommend the best-matched candidates based on job requirements and candidate skills and experience.	4.0	5	2.0

Table 4.21 (Continued)

Item	Resolution	Md	Mo	IQR
49	Implementing intelligent learning management to personalize recommendations for suitable training courses and learning paths based on employees' learning history, interests, and abilities.	5.0	5	0.0
50	Combining data analysis to continuously optimize learning content and resource allocation, enhancing training effectiveness and employee development quality.	4.0	5	2.0
51	Introducing artificial intelligence algorithms to analyze performance data, identify and predict performance patterns, uncover hidden performance trends, and associated factors.	5.0	5	0.0
52	Using machine learning technology to establish personalized performance evaluation models, supporting fair evaluations across departments and positions, and providing real-time feedback and improvement suggestions.	5.0	5	0.0
53	Introducing intelligent job demand analysis tools to automatically match job requirements with candidate skills and experience using big data and machine learning.	5.0	5	0.0
54	Combining data mining technology to analyze historical recruitment data and successful cases, optimizing the recruitment decision-making process to enhance scientific accuracy and precision.	3.5	[3,4]	2.0

Table 4.21 (Continued)

Item	Resolution	Md	Mo	IQR
55	Introducing intelligent compensation management, combining machine learning and predictive analytics to automatically identify salary inequalities and potential welfare optimization opportunities.	5.0	5	0.0
56	Introducing intelligent compensation adjustment tools to automatically recommend fair and reasonable salary adjustment plans based on performance data, enhancing employee satisfaction and system accuracy.	5.0	5	0.0

According to Table 4.21, 9 of the 12 resolutions to enhance the application of artificial intelligence technology showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating that 75.00% of the resolutions achieved a high degree of consensus. The opinions that I strongly agree with are as follows: item 46, 47, 49, 51, 52, 53, 55, 56 are all ($Md=5.0$, $Mo=5$, $IQR=0.0$); items 45 ($IQR=2.0$) among the moderate consensus resolutions, shows a degree of opinion Disagreement. Items 48, 50 ($Md=4.0$, $IQR=2.0$), item 54 ($Md=3.5$, $IQR=2.0$) indicate that there are significant differences in opinions among the experts.

4.1.3 Result for Round 2: Identified resolutions to improve Human Resource Management

Table 4.22 Identified resolutions to improve Human Resource Management

Item	Resolution	Result
	The data management organization and policy standards need to be unified	
1	Establish and promote unified personnel information storage standards and data formats to ensure smooth data exchange between departments and reduce information redundancy.	Pass
2	Implement data quality management mechanisms to ensure data accuracy and completeness, reducing information redundancy and errors.	Pass
3	Standardize candidate information collection in the recruitment process to ensure completeness and consistency, enhancing data quality and analysis reliability.	Eliminated
4	Enhance data management for employee training records, establish comprehensive archives of training data to quantify and compare the effectiveness of different training programs.	Pass
5	Design evaluation standards for training effectiveness, incorporating pre- and post-training skill assessments and job performance evaluations to objectively assess the impact and value of training.	Pass
6	Develop unified standards for performance data collection and evaluation methods to ensure consistency and accuracy in performance evaluations.	Pass
7	Establish detailed and unified job description standards, introduce job requirement analysis tools or systems to facilitate accurate matching of recruitment needs and actual positions, reducing failure rates.	Pass
8	Regularly update and review job descriptions to ensure alignment with organizational development and talent needs, enhancing efficiency and accuracy in job appointments.	Pass

Table 4.22 (Continued)

Item	Resolution	Result
9	Establish a data system conducive to scientifically formulating compensation and benefits policies to ensure fairness in benefits and enhance employee satisfaction.	Pass
10	Develop unified compensation and benefits standards and processes to ensure policy transparency and consistency, preventing unfair practices and improving employee acceptance and satisfaction with benefits policies.	Pass
The application of big data technology needs to be strengthened		
11	Introducing big data analytics platforms or tools to extract talent insights and predictive analytics from vast amounts of data helps identify potential high-value talents.	Pass
12	Integrating data from various sources facilitates comprehensive talent information integration and exploration.	Eliminated
13	Utilizing big data analytics technology for intelligent candidate screening and matching enhances recruitment precision and efficiency.	Pass
14	Implementing data-driven recruitment decision strategies analyzes recruitment data to optimize processes and resource allocation, reducing recruitment cycles and costs.	Pass
15	Providing personalized training recommendations and course suggestions based on employees' skills and career development needs using big data analysis.	Pass

Table 4.22 (Continued)

Item	Resolution	Result
16	Analyzing training effectiveness and employee performance data to adjust and optimize personalized training plans maximizes training resource utilization and significantly improves training effectiveness.	Eliminated
17	Using big data technology to analyze multidimensional employee performance data and trends provides objective, accurate performance evaluations and recommendations.	Pass
18	Establishing real-time data monitoring and feedback mechanisms enables managers to track and adjust performance evaluation processes promptly, ensuring fairness and transparency.	Pass
19	Introducing intelligent job demand analysis tools combined with big data analysis identifies and forecasts future job demand trends, enhancing the scientific accuracy and precision of job appointment decisions.	Pass
20	Implementing data-driven job matching automates recommending the best-matched candidates based on job requirements and employee skill characteristics, optimizing job appointment efficiency and quality.	Pass
21	Analyzing compensation data and employee benefit preferences using big data analysis tools to formulate scientifically-based compensation and benefits policies improves policy accuracy and employee satisfaction.	Eliminated
22	Establishing dynamic adjustment mechanisms monitors the execution effectiveness and employee feedback of compensation and benefits policies through big data analysis, enabling timely strategy adjustments to maintain effectiveness and adaptability.	Eliminated

Table 4.22 (Continued)

Item	Resolution	Result
	The application of information technology needs to be deepened	
23	Implementing comprehensive human resources information management ensures support for multiple data sources and real-time updates, enhancing efficiency and accuracy in information management.	Pass
24	Deploying a complete recruitment management system integrates various online resources to improve recruitment efficiency and candidate experience.	Pass
25	Introducing artificial intelligence and big data analytics automate candidate screening and matching, reducing manual operations and enhancing the scientific accuracy and precision of recruitment decisions.	Pass
26	Implementing intelligent employee learning management integrates employee skill profiles and career development plans to provide personalized training needs analysis and course recommendations.	Pass
27	Introducing advanced digital technologies provides immersive learning experiences and practical environments, enhancing training interactivity and attractiveness.	Pass
28	Establishing a performance evaluation management system that supports diverse evaluation methods and customized evaluation criteria improves the accuracy and timeliness of evaluation data.	Pass
29	Using big data technology to analyze employee performance data identifies trends and optimization suggestions, enhancing the objectivity and scientific nature of the evaluation process.	Pass
30	Implementing intelligent talent management combines big data analytics to automatically match the best candidates for different positions, enhancing the scientific accuracy and precision of recruitment decisions.	Pass

Table 4.22 (Continued)

Item	Resolution	Result
31	Using intelligent analysis tools to quickly and accurately understand and respond to recruitment needs optimizes recruitment processes and reduces human resource management costs.	Pass
32	Implementing integrated compensation and benefits management supports various benefit schemes and flexible benefit options, enhancing the scientific nature of compensation and benefits policies and employee satisfaction.	Pass
33	Introducing intelligent compensation analysis tools optimizes compensation based on data-driven decisions, increasing organizational attractiveness and retention rates for talent. Database technology needs to be improved	Pass
34	Redesign and optimize the database system to improve data storage efficiency and query speed.	Pass
35	Introduce caching mechanisms and optimize indexing to reduce data retrieval time, enhancing real-time information management efficiency.	Pass
36	Develop customized recruitment modules to allow quick configuration and adjustment of recruitment processes to meet changing recruitment needs and data growth.	Pass
37	Implement comprehensive learning management to support recording and managing various forms of training.	Eliminated
38	Conduct in-depth analysis of training data through data analysis tools to evaluate training effectiveness and optimize resource allocation.	Eliminated
39	Update performance evaluation systems to support customized evaluation metrics and scoring criteria, adapting to specific needs of different departments and positions.	Eliminated

Table 4.22 (Continued)

Item	Resolution	Result
40	Introduce flexible evaluation modules to allow adjustment and optimization of evaluation processes, enhancing fairness and accuracy of evaluation results.	Eliminated
41	Unified job description and position requirement management to ensure integrity and consistency in information input and updates.	Pass
42	Implement automated data validation and audit mechanisms to promptly identify and correct inaccuracies, improving the scientific accuracy and precision of hiring decisions.	Pass
43	Strengthen security measures of the compensation and benefits database, including data encryption, access control, and real-time monitoring.	Eliminated
44	Implement regular data backup and recovery strategies to mitigate risks of accidental data loss or damage, enhancing reliability of compensation and benefits management and employee trust. The application of artificial intelligence technology needs to be enhanced	Eliminated
45	Introducing artificial intelligence and machine learning algorithms to analyze talent information in big data, extract key talent characteristics and trend analysis, supporting talent prediction and strategic planning.	Pass
46	Introducing intelligent talent analysis tools, integrating natural language processing (NLP) and data mining technology, automating the identification and evaluation process of key talents.	Pass

Table 4.22 (Continued)

Item	Resolution	Result
47	Implementing intelligent personnel recruitment management to achieve automatic resume screening and smart matching of candidates, improving recruitment efficiency and accuracy.	Pass
48	Developing machine learning-based recruitment recommendation engines to automatically recommend the best-matched candidates based on job requirements and candidate skills and experience.	Eliminated
49	Implementing intelligent learning management to personalize recommendations for suitable training courses and learning paths based on employees' learning history, interests, and abilities.	Pass
50	Combining data analysis to continuously optimize learning content and resource allocation, enhancing training effectiveness and employee development quality.	Eliminated
51	Introducing artificial intelligence algorithms to analyze performance data, identify and predict performance patterns, uncover hidden performance trends, and associated factors.	Pass
52	Using machine learning technology to establish personalized performance evaluation models, supporting fair evaluations across departments and positions, and providing real-time feedback and improvement suggestions.	Pass
53	Introducing intelligent job demand analysis tools to automatically match job requirements with candidate skills and experience using big data and machine learning.	Pass
54	Combining data mining technology to analyze historical recruitment data and successful cases, optimizing the recruitment decision-making process to enhance scientific accuracy and precision.	Eliminated

Table 4.22 (Continued)

Item	Resolution	Result
55	Introducing intelligent compensation management, combining machine learning and predictive analytics to automatically identify salary inequalities and potential welfare optimization opportunities.	Pass
56	Introducing intelligent compensation adjustment tools to automatically recommend fair and reasonable salary adjustment plans based on performance data, enhancing employee satisfaction and system accuracy.	Pass

Based on the survey results in Table 4.22, 21 experts were invited to conduct a feasibility assessment on 56 improvement resolutions proposed for 5 problems in Human Resource Management. Among them, 14 items were eliminated due to low recognition ($IQR \geq 1.80$ and $Md \leq 4.5$) by expert reviews, and the remaining 42 improvement resolutions were highly recognized by expert reviews. The eliminated items are: Standardize candidate information collection in the recruitment process to ensure completeness and consistency, enhancing data quality and analysis reliability; integrating data from various sources facilitates comprehensive talent information integration and exploration; analyzing training effectiveness and employee performance data to adjust and optimize personalized training plans maximizes training resource utilization and significantly improves training effectiveness; analyzing compensation data and employee benefit preferences using big data analysis tools to formulate scientifically-based compensation and benefits policies improves policy accuracy and employee satisfaction; establishing dynamic adjustment mechanisms monitors the execution effectiveness and employee feedback of compensation and benefits policies through big data analysis, enabling timely strategy adjustments to maintain effectiveness and adaptability; implement comprehensive learning management to support recording and managing various forms of training; conduct

in-depth analysis of training data through data analysis tools to evaluate training effectiveness and optimize resource allocation; update performance evaluation systems to support customized evaluation metrics and scoring criteria, adapting to specific needs of different departments and positions; introduce flexible evaluation modules to allow adjustment and optimization of evaluation processes, enhancing fairness and accuracy of evaluation results; strengthen security measures of the compensation and benefits database, including data encryption, access control, and real-time monitoring; implement regular data backup and recovery strategies to mitigate risks of accidental data loss or damage, enhancing reliability of compensation and benefits management and employee trust; developing machine learning-based recruitment recommendation engines to automatically recommend the best-matched candidates based on job requirements and candidate skills and experience; combining data analysis to continuously optimize learning content and resource allocation, enhancing training effectiveness and employee development quality; combining data mining technology to analyze historical recruitment data and successful cases, optimizing the recruitment decision-making process to enhance scientific accuracy and precision.

4.1.4 Results for Round 2: Results of median, mode and inter-quartile range analysis of influencing factors on Human Resource Management.

Table 4.23 Factors affecting Personnel Information Management

Items	Influencing factors	Md	Mo	IQR
1	Unified data management standards	4.0	5	2.0
2	Complete data storage	5.0	5	2.0
3	Accurate data recording	5.0	5	0.0
4	Smooth data sharing	5.0	5	0.0
5	Secure data management	4.0	5	2.0

According to Table 4.23, it was found that 3 of the 5 factors that affect Personnel Information Management showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating 60.00%. A high degree of consensus was achieved on the influencing factors. The opinions that I strongly agree with are as follows: item 3 “Accurate data recording” and item 4 “Smooth data sharing”, are ($Md=5.0$, $Mo=5$, $IQR=0.0$); item 2 “Complete data storage” ($IQR=2.0$) among the moderate consensus factors, shows a degree of opinion Disagreement; item 1 ($Md=4.0$, $IQR=2.0$) and item 5 ($Md=4.0$, $IQR=2.0$) show that there are significant differences in opinions among the experts.

Table 4.24 Factors affecting Personnel Recruitment Management

Items	Influencing factors	Md	Mo	IQR
6	Personalized recruitment process	4.0	4	2.0
7	Intelligent recruitment strategies	5.0	5	0.0
8	Unified data storage management	4.0	5	2.0
9	Automated recruitment process implementation	5.0	5	1.0
10	Intelligent candidate matching and screening	5.0	5	1.0

According to Table 4.24, it was found that 3 of the 5 factors that affect Personnel Recruitment Management showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating 60.00% A high degree of consensus was achieved on the influencing factors. The opinions that I strongly agree with are as follows: item 7 “Intelligent recruitment strategies” ($Md=5.0$, $Mo=5$, $IQR=0.0$), item 9 “Automated recruitment process implementation” and item 10 “Intelligent candidate matching and screening”, are ($Md=5.0$, $Mo=5$, $IQR=1.0$); item 6 ($Md=4.0$, $Mo=4$, $IQR=2.0$) and item 5 ($Md=4.0$, $Mo=5$, $IQR=2.0$) show that there are significant differences in opinions among the experts.

Table 4.25 Factors affecting Personnel Development Management

Items	Influencing factors	Md	Mo	IQR
11	Investment in information technology resources	4.0	5	2.0
12	Identification of training needs	5.0	5	0.0
13	Personalized development of training plans	5.0	5	0.0
14	Reasonable allocation of resources	5.0	5	2.0
15	Targeted guidance	4.0	5	2.0

According to Table 4.25, it was found that 3 of the 5 factors that affect Personnel Development Management showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating 60.00% A high degree of consensus was achieved on the influencing factors. The opinions that I strongly agree with are as follows: item 12 “Identification of training needs” and item 13 “Personalized development of training plans”, are ($Md=5.0$, $Mo=5$, $IQR=0.0$); item 14 “Reasonable allocation of resources” ($IQR=2.0$) among the moderate consensus factors, shows a degree of opinion Disagreement; item 11 and item 15 are ($Md=4.0$, $Mo=5$, $IQR=2.0$), show that there are significant differences in opinions among the experts.

Table 4.26 Factors affecting Performance Assessment Management

Items	Influencing factors	Md	Mo	IQR
16	Intelligent performance assessment	5.0	5	0.0
17	Accurate data management	4.0	[3, 5]	2.0
18	In-depth analysis of performance data	5.0	5	2.0
19	Unified assessment standards	4.0	4	2.0
20	Sound feedback mechanism	5.0	5	0.0

According to Table 4.26, it was found that 3 of the 5 factors that affect Performance Assessment Management showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating 60.00% A high degree of consensus was achieved on the influencing factors. The opinions that I strongly agree with are as follows: item 16 “Intelligent performance assessment” and item 20 “Sound feedback mechanism”, are (Md=5.0, Mo=5, IQR=0.0); item 18 “In-depth analysis of performance data” (IQR=2.0) among the moderate consensus factors, shows a degree of opinion Disagreement; item 17 (Md=4.0, Mo=[3, 5], IQR=2.0) and item 19 (Md=4.0, Mo=4, IQR=2.0), show that there are significant differences in opinions among the experts.

Table 4.27 Factors affecting Internal Promotion Management

Items	Influencing factors	Md	Mo	IQR
21	Unified hiring criteria	5.0	5	1.0
22	Complete data information	4.0	4	2.0
23	Intelligent job matching	5.0	5	0.0
24	Transparent decision-making process	4.0	[3, 5]	2.0
25	Clear promotion channels	5.0	5	2.0

According to Table 4.27, it was found that 3 of the 5 factors that affect Internal Promotion Management showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating 60.00% A high degree of consensus was achieved on the influencing factors. The opinions that I strongly agree with are as follows: item 23 “Intelligent job matching” ($Md=5.0$, $Mo=5$, $IQR=0.0$), and item 21 “Unified hiring criteria” ($Md=5.0$, $Mo=5$, $IQR=1.0$); item 25 “Clear promotion channels” ($IQR=2.0$) among the moderate consensus factors, shows a degree of opinion Disagreement; item 22 ($Md=4.0$, $Mo=4$, $IQR=2.0$) and item 24 ($Md=4.0$, $Mo=[3, 5]$, $IQR=2.0$), show that there are significant differences in opinions among the experts.

Table 4.28 Factors affecting Compensation and Benefits Management

Items	Influencing factors	Md	Mo	IQR
26	Centralized unified data management	4.0	[3, 4]	2.0
27	Intelligent analysis of compensation and benefits	5.0	5	0.0
28	Personalized incentive measures	5.0	5	0.0
29	Intelligent policy analysis	5.0	5	2.0
30	Fair compensation and benefits system	4.0	[3, 5]	2.0

According to Table 4.28, it was found that 3 of the 5 factors that affect Compensation and Benefits Management showed high consistency with the inter-quartile range ($0.0 \leq IQR \leq 1.8$) or median ($4.5 \leq Md \leq 5.0$), indicating 60.00% A high degree of consensus was achieved on the influencing factors. The opinions that I strongly agree with are as follows: item 27 “Intelligent analysis of compensation and benefits” and item 28 “Personalized incentive measures”, are ($Md=5.0$, $Mo=5$, $IQR=0.0$); item 29 “Intelligent policy analysis” ($IQR=2.0$) among the moderate consensus factors, shows a degree of opinion Disagreement; item 26 ($Md=4.0$, $Mo=[3, 4]$, $IQR=2.0$) and

item 30 (Md=4.0, Mo=[3, 5], IQR=2.0), show that there are significant differences in opinions among the experts.

4.1.5 Results for Round 2: Identified factors influencing Human Resource Management

Table 4.29 Identified factors influencing Human Resource Management

Item	Factor	Result
Personnel Information Management		
1	Unified data management standards	Eliminated
2	Complete data storage	Pass
3	Accurate data recording	Pass
4	Smooth data sharing	Pass
5	Secure data management	Eliminated
Personnel Recruitment Management		
6	Personalized recruitment process	Eliminated
7	Intelligent recruitment strategies	Pass
8	Unified data storage management	Eliminated
9	Automated recruitment process implementation	Pass
10	Intelligent candidate matching and screening	Pass
Personnel Development Management		
11	Investment in information technology resources	Eliminated
12	Identification of training needs	Pass
13	Personalized development of training plans	Pass
14	Reasonable allocation of resources	Pass
15	Targeted guidance	Eliminated
Performance Assessment Management		
16	Intelligent performance assessment	Pass
17	Accurate data management	Eliminated

Table 4.29 (Continued)

Item	Factor	Result
18	In-depth analysis of performance data	Pass
19	Unified assessment standards	Eliminated
20	Sound feedback mechanism	Pass
Internal Promotion Management		
21	Unified hiring criteria	Pass
22	Complete data information	Eliminated
23	Intelligent job matching	Pass
24	Transparent decision-making process	Eliminated
25	Clear promotion channels	Pass
Compensation and Benefits Management		
26	Centralized unified data management	Eliminated
27	Intelligent analysis of compensation and benefits	Pass
28	Personalized incentive measures	Pass
29	Intelligent policy analysis	Pass
30	Fair compensation and benefits system	Eliminated

According to the findings in Table 4.29, 21 experts were asked to conduct a feasibility assessment on 30 factors that affect Human Resource Management. Among them, 18 factors were unanimously approved, and 12 items were adjusted due to low expert recognition ($IQR \geq 1.80$ and $Md \leq 4.5$). The eliminated items are: Unified data management standards; secure data management; personalized recruitment process; unified data storage management; investment in information technology resources; targeted guidance; accurate data management; unified assessment standards; complete data information; transparent decision-making process; centralized unified data management; fair compensation and benefits system.

4.1.6 Expert survey questionnaire to confirm "current problems and resolutions on Human Resource Management for Chinese Universities in Sichuan"

In order to design an effective and highly targeted expert survey questionnaire, 5 experts in the fields of Human Resource Management, information technology and educational management were provided a expert survey questionnaire of "problems and resolutions on Human Resource Management for Chinese Universities in Sichuan". 5 experts need independently check the validity, appropriateness, clarity and completeness of the expression of each question and evaluate completely agree (1 point), partly agree (0 point) or disagree (-1 point). The evaluation results were shown in Table 4.30.

Table 4.30 Evaluation results of the expert survey questionnaire on “problems and resolutions on Human Resource Management for Chinese Universities in Sichuan”

Aspects Evaluated	Evaluate the Content	N	Freq	Percentage	S.D	<i>IOC</i>
Question Validity	The questions are closely aligned with the research objectives, and the quantity is reasonable.	5	5	100	0.000	1.000
Clarity of Expression	The expression is appropriate, clear, unambiguous and targeted.	5	4	90	0.400	0.800
Completeness of Content	The content is relatively comprehensive and covers issues related to human resource management.	5	5	100	0.000	1.000
Procedural Regularity	Information collection, sorting, analysis and other processes are standardized.	5	5	100	0.000	1.000
Effectiveness of Conclusions	The conclusions drawn regarding current human resource management problems and countermeasures are valid.	5	5	100	0.000	1.000

According to Table 4.30, all experts completely agree on the following four aspects of the expert survey questionnaire: Question Validity, Completeness of Content, Procedural Regularity, and Effectiveness of Conclusions. One expert partly agrees on the Clarity of Expression and has provided suggestions for modification of question No.57, 113, and 115.

Phase 2: To design a decision making model for Chinese universities human resource management in Sichuan.

Based on the results of Objective 1 and the research results of the literature review, a comprehensive analysis of the current problems, resolutions and influencing factors of human resource management was conducted. According to the research results, there are 6 main subjects in university human resource management: “Personnel Information Management”, “Personnel Recruitment Management”, “Personnel Development Management”, “Performance Assessment Management”, “Internal Promotion Management”, and “Compensation and Benefits Management”. There are 18 influencing factors to address the current problems in university human resource management: Complete data storage; accurate data recording, smooth data sharing, intelligent recruitment strategies, automated recruitment process implementation, intelligent candidate matching and screening, identification of training needs, personalized development of training plans, reasonable allocation of resources, intelligent performance assessment, in-depth analysis of performance data, sound feedback mechanism, unified hiring criteria, intelligent job matching, clear promotion channels, intelligent analysis of compensation and benefits, personalized incentive measures, and intelligent policy analysis. Using systematic thinking and combined with the management practice of human resource management, an decision making model was constructed (Figure 4.1, referred to as the HRM-DM model).



Figure 4.1 HRM-DM model diagram

4.2.1 Model description:

The Decision Making Model for Human Resource Management is a relatively fixed and inclusive model formed by the integration of relevant subjects and influencing factors. The construction of this model aims to provide practical support and platform supply for Human Resource Management in Chinese universities in Sichuan.

4.2.1.1 For Personnel Information Management:

The relationship between the subject and influencing factors

Complete data storage: In personnel information management, comprehensive data storage is crucial to ensuring that systems can fully record and maintain all key employee information. This includes, but is not limited to, personal profiles, employment history, training records, and more. Having comprehensive data storage means that managers and decision-makers can access and analyze detailed information about employees at any time, facilitating more effective human resources planning, employee development, and performance management.

Thorough records of personal profiles enable managers to gain deeper insights into each employee's background, skills, and strengths, thereby allowing more precise task assignments and appropriate career development opportunities. Comprehensive storage of employment history showcases employees' growth paths and career transitions within the organization, providing valuable reference points for promotions and talent development. Additionally, detailed training records help evaluate employees' skill levels and learning outcomes, supporting future training plans and skill enhancements. So, establishing and maintaining a complete data storage system is a critical step in ensuring smooth organizational operations and informed decision-making.

Accurate data recording: In personnel information management, the accuracy and completeness of data are paramount. Modern digital technologies ensure high data accuracy through automated and systematic data entry and updating processes, significantly reducing the potential for human errors. This is

particularly critical for the human resources department, as these data serve not only as crucial bases for employee assessments, compensation management, and legal compliance but also directly impact the effectiveness of management decisions and organizational efficiency.

Precise and error-free data recording not only assists managers in accurately assessing employee performance and needs but also supports the development of fair and reasonable compensation plans and ensures compliance with legal requirements without mistakes. With reliable information at hand, managers can confidently make strategic decisions, thereby enhancing overall management quality and organizational competitiveness. Therefore, establishing a robust data management system to ensure data accuracy and completeness has become an indispensable management practice for modern organizations. This not only helps mitigate management risks and improve the scientific basis of decision-making but also provides solid data support and assurance for sustained organizational development.

Smooth data sharing: Smooth data sharing between different departments within an organization is crucial for significantly enhancing efficiency and collaboration. Modern digital technologies facilitate this seamless data sharing through integrated Human Resources Information Systems (HRIS) or other data management tools. Such sharing ensures that all relevant personnel can access necessary information promptly, such as personnel deployment between departments and the formation of cross-departmental project teams.

Smooth data sharing not only helps reduce redundant work and mitigate information silos but also fosters internal information flow and knowledge sharing within the organization. Closer cooperation and streamlined communication between departments enhance overall work efficiency and collaborative efforts. Additionally, by sharing data, organizations can respond more swiftly to market changes and customer demands, thereby boosting organizational agility and competitiveness. Establishing and maintaining a smooth data sharing mechanism has become an integral part of modern organizational management. By optimizing data

flow and sharing, organizations can better leverage internal resources, strengthen collaboration and communication among teams, and achieve more effective and sustainable business development.

The relationship between influencing factors

Complete data storage and accurate data recording: Complete data storage forms the basis for accurate and error-free data recording. If data storage is incomplete, it becomes impossible to ensure the accuracy and comprehensiveness of data. Therefore, these two factors typically depend on each other, where a deficiency in one can affect the implementation of the other.

Accurate data recording and smooth data sharing: Accurate and error-free data recording provides a reliable information foundation for smooth data sharing. Only when data accuracy is guaranteed can departments and individuals trust and effectively utilize this data for sharing and utilization. Therefore, data accuracy directly influences the smoothness and effectiveness of data sharing.

Smooth Data Sharing and complete data storage: Smooth data sharing requires a complete data storage system as its support. Incomplete or scattered data storage across different systems can lead to difficulties and inconsistencies in data sharing. Therefore, to achieve smooth data sharing, it is essential to ensure an integrated and complete data storage system is in place.

4.2.1.2 For Personnel Recruitment Management:

The relationship between the subject and influencing factors

Intelligent recruitment strategies: Intelligent recruitment strategies utilize data analysis and artificial intelligence technologies to optimize recruitment processes. By analyzing market trends, candidate skill requirements, and the effectiveness of campus recruitment, these intelligent strategies can provide more precise recruitment directions and methods. This helps human resources management departments to quickly and effectively find talent that meets their needs, thereby enhancing recruitment quality and efficiency.

Intelligent recruitment strategies leverage real-time analysis of big data and individual candidate information to accurately forecast talent supply and

demand in the market, allowing for adjustments in recruitment strategies and resource allocation. For instance, based on specific industry or position talent shortages, the system can recommend the most effective recruitment channels and strategies to ensure the success and cost-effectiveness of recruitment activities. Intelligent recruitment strategies optimize candidate experience through personalized communication and interactions, enhancing attractiveness and satisfaction with the organization, thus improving recruitment branding and long-term talent attraction. In summary, intelligent recruitment strategies are not only key to improving recruitment efficiency but also crucial strategies for optimizing human resources management and enhancing organizational competitiveness.

Automated recruitment process implementation: Automating recruitment processes through the use of recruitment management systems and workflow automation tools simplifies tedious tasks in the recruitment process such as job posting, resume screening, and interview scheduling. This automation not only saves time and manpower costs but also reduces the possibility of human errors, thereby enhancing overall consistency and transparency in the recruitment process.

Automated recruitment processes enable automatic job ad postings, management and screening of a large number of applicant resumes, and automated scheduling of interviews. With preset workflows and rules, the system ensures that each step of the recruitment process is executed according to predefined standards and schedules, thereby improving recruitment efficiency and management quality. Automating recruitment processes enhances the candidate experience through quick responses and timely communication, strengthening candidates' positive impressions and trust in the organization. For recruitment teams, automation tools provide more time and resources to focus on strategic recruitment activities and candidate relationship management, further enhancing recruitment success rates and effectiveness.

Intelligent candidate matching and screening: Intelligent candidate matching utilizes algorithms and data analytics to swiftly and accurately screen candidates based on job requirements, skills, experience, and other factors. This

intelligent screening process not only significantly reduces the workload of hiring managers but also ensures that only qualified candidates proceed to the interview stage, thereby greatly enhancing recruitment efficiency and success rates.

The intelligent matching system analyzes candidates' resumes, skills, educational backgrounds, and other relevant information, aligning them with specific job requirements and cultural fit within the company, to autonomously assess each candidate's suitability. This not only saves human resources departments time and effort in manually screening resumes but also reduces the potential for subjective bias and erroneous judgments. For the recruitment process, intelligent candidate matching not only improves efficiency but also enhances its scientific rigor and fairness. Candidates receive responses more quickly, enhancing their overall impression of the organization and candidate experience. Moreover, this systematic screening process saves costs for the organization, mitigates risks and uncertainties in the recruitment process, and facilitates quicker filling of key positions, thereby fostering sustainable organizational development.

The relationship between influencing factors

Intelligent recruitment strategies and automated recruitment process implementation: Intelligent recruitment strategies provide guidance and data support for implementing automated recruitment processes. By analyzing recruitment data and trends, intelligent strategies optimize various aspects of automated processes to ensure higher efficiency and precision.

Automated recruitment process implementation and intelligent candidate matching and screening: Automated recruitment processes directly integrate technologies for intelligent candidate matching. These automated processes swiftly apply intelligent matching algorithms to screen and select the most suitable candidates from a large pool, thereby accelerating recruitment cycles and improving recruitment accuracy.

Intelligent candidate matching and screening and intelligent recruitment strategies: Intelligent candidate matching directly benefits from the data support and guidance of intelligent recruitment strategies. Optimized recruitment

strategies provide more precise recruitment requirements and standards, thereby enhancing the algorithms and accuracy of intelligent candidate matching.

4.2.1.3 For Personnel Development Management:

The relationship between the subject and influencing factors

Identification of training needs: Under the support of digital technology, training needs identification uses data analysis and employee assessments to precisely pinpoint employees' training needs and development directions. This includes analyzing the gap between current skills and required skills, identifying opportunities and challenges for career development, and aligning with organizational strategic goals. By accurately identifying training needs, the HR department can plan and implement training programs tailored to enhance employees' professional skills and performance. This personalized training approach not only promotes employees' career development but also significantly enhances overall organizational efficiency and competitiveness.

Data analysis plays a crucial role in training needs identification by collecting and analyzing performance data, training records, and career development plans to determine specific training content and resource allocation for each employee at different stages. This personalized approach ensures the maximization of training investments, enhances employee satisfaction and motivation, and helps build a continuous learning organization.

Personalized development of training plans: Advancements in digital technology have made personalized training development plans feasible, tailoring training content and scheduling based on each employee's specific needs and development goals. Unlike traditional one-size-fits-all methods, personalized training plans can more accurately match employees' learning backgrounds, skill levels, and career aspirations, thereby enhancing their engagement and motivation in training.

Through detailed analysis of individualized needs, the HR department can design training paths that best suit employees' growth requirements. This meticulous management not only improves training effectiveness and conversion rates but also stimulates employees' interest and initiative in learning. In such a

training environment, employees are more likely to quickly absorb and apply acquired knowledge, thereby better aligning personal career goals with organizational strategic objectives. Personalized training development plans also provide organizations with distinct talent development advantages. By effectively harnessing and utilizing employees' potential, organizations can cultivate a more creative and adaptable workforce, laying a solid foundation for sustained innovation and competitive advantage.

Reasonable allocation of resources: In personnel development management, optimal resource allocation is crucial to ensure the effective implementation of various training activities. This involves efficiently allocating various resources required for training, including manpower, time, and budget, to support the smooth execution of the entire training cycle and achieve expected training goals.

Digital technology plays a vital role in optimal resource allocation through modern training management systems and resource optimization tools, enabling precise management and monitoring of training resources. The system intelligently allocates manpower and schedules based on specific training needs and priorities, ensuring efficient operation and smooth progress of training activities. Through precise budget control and optimized resource utilization, organizations can maximize the cost-effectiveness of training activities, avoiding resource waste and unnecessary expenditures. Optimal resource allocation not only enhances the execution efficiency of training activities but also ensures that employees receive adequate support and attention during the training process, thereby accelerating their personal career skill development and promoting career advancement. By designing meticulous training resource allocation strategies, organizations can more effectively respond to changing training demands, enhance overall talent quality and organizational performance, and achieve an organic integration of HR management best practices and strategic objectives.

The relationship between influencing factors

Identification of training needs and personalized development of training plans: Training needs identification forms the foundation and basis for developing personalized training development plans. Only by clearly understanding employees' specific needs and bottlenecks can effective personalized training plans be developed to meet their individualized requirements in skills and career development.

Personalized development of training plans and reasonable allocation of resources: Personalized training development plans require optimal allocation of training resources to support their implementation. Resource allocation should be based on different training needs and plan priorities to ensure effective resource utilization, while avoiding waste or shortages of resources, thereby ensuring the success and effectiveness of training.

Reasonable allocation of resources and Identification of training needs: Optimal resource allocation should be based on a thorough understanding and identification of training needs to ensure that resources are allocated in alignment with actual requirements. Effective resource allocation not only supports the identification and formulation of training needs but also enhances the flexibility and responsiveness of training activities, promoting continuous learning and development among employees.

4.2.1.4 For Performance Assessment Management

The relationship between the subject and influencing factors

Intelligent performance assessment: Intelligent performance evaluation utilizes data analysis and artificial intelligence technologies to assess and analyze employees' work performance and goal achievements. This method reduces the impact of subjective factors significantly through automated and standardized evaluation processes, thereby enhancing objectivity and fairness. Intelligent systems can swiftly and accurately analyze employees' performance based on predefined evaluation criteria and data indicators, assisting managers in more precisely evaluating each employee's work performance. Furthermore, this technology-

supported performance evaluation provides reliable data for personalized career development paths and decisions regarding rewards and penalties. It enables managers to make more informed talent management decisions based on objective data, thereby improving employee job satisfaction and overall performance levels.

In-depth analysis of performance data: In-depth analysis of performance data utilizes big data technologies and data mining methods to thoroughly analyze employees' performance data and uncover potential patterns and trends. This analysis not only identifies areas of excellence and areas needing improvement but also reveals key factors and driving forces influencing performance. By delving into the information behind the data, human resource management departments can gain a more accurate understanding of employee performance, providing a basis for targeted improvement strategies and personalized development plans.

In-depth analysis of performance data helps managers understand the reasons behind different performance levels, optimizing management methods and incentive mechanisms to further enhance overall organizational performance. This approach goes beyond assessing current performance to predicting future performance trends, supporting long-term talent management decisions. Through data-driven analysis, organizations can more precisely identify areas needing focused attention and improvement, thereby achieving sustained performance improvement and enhancing organizational effectiveness.

Sound feedback mechanism: A sound feedback mechanism is crucial for ensuring the effectiveness of performance evaluations and enhancing employee engagement. Through timely and accurate feedback, managers can clearly communicate performance evaluation results and development suggestions to employees. Effective feedback not only encourages employees to improve themselves but also promotes their career growth and personal development.

An effective feedback mechanism establishes a communication bridge between employees and management, enhancing employees' trust and satisfaction with the performance evaluation process. Through proactive feedback, employees

can better understand their strengths and areas for improvement at work, thereby adjusting their work methods more effectively and improving work efficiency. A sound feedback mechanism also helps managers identify challenges and needs that employees may face, supporting personalized development plans and career guidance. Through regular, systematic feedback meetings or tools, managers and employees can collectively discuss performance evaluation results, formulate feasible improvement measures, and ensure the fairness and transparency of the feedback process.

The relationship between influencing factors

Intelligent performance assessment and in-depth analysis of performance data: Intelligent performance evaluation provides high-quality data sources for the in-depth analysis of performance data. Through automated and standardized evaluation processes, the data generated by intelligent systems can be directly used for deep analysis, helping uncover patterns and insights hidden within the data, further refining evaluation methods and standards.

In-depth analysis of performance data and sound feedback mechanism: In-depth analysis of performance data provides objective and detailed basis for a sound feedback mechanism. By thoroughly analyzing employees' performance data, managers can more accurately identify improvement opportunities and development needs, providing strong support and suggestions for feedback, thereby enhancing the effectiveness and impact of feedback.

Sound feedback mechanism and intelligent performance assessment: A sound feedback mechanism is an integral part of intelligent performance evaluation. An effective feedback mechanism not only provides timely feedback on evaluation results but also promotes continuous improvement and learning among employees, which in turn enhances the data quality and application effectiveness of intelligent systems.

4.2.1.5 For Internal Promotion Management

The relationship between the subject and influencing factors

Unified hiring criteria: Unified hiring criteria refer to the importance of ensuring fairness and consistency in the internal promotion process. These criteria include clear standards, conditions, and procedures for hiring. Through these standards, managers and the human resources department can objectively evaluate candidates and avoid the influence of subjective biases. Unified hiring criteria not only enhance the transparency and fairness of the internal promotion process but also effectively reduce risks and legal liabilities.

Appointment standards typically cover aspects such as candidates' educational backgrounds, work experience, skills, and qualification requirements. These standards not only help managers assess whether candidates meet job requirements but also ensure that each candidate receives fair treatment during evaluations. For managers, adhering to unified employment criteria can streamline decision-making processes and reduce risks associated with subjective judgments. This consistency and fairness are significant not only during candidate hiring but also throughout the entire internal promotion process, from candidate screening to assessment and final decision-making.

Intelligent job matching: Intelligent job matching utilizes data analysis and artificial intelligence technology to accurately match candidates' skills, experience, and backgrounds with job requirements. Supported by algorithms, intelligent position matching can quickly screen out the most suitable candidates for the position, enhancing the efficiency and success rate of internal promotions. This technology not only saves time and costs in the internal promotion process but also reduces errors and resource wastage, thereby optimizing the quality and effectiveness of job hiring management.

Intelligent job matching relies on advanced data analysis and machine learning algorithms to accurately analyze candidates' resumes and skills and compare them with job descriptions. Through this method, managers can more quickly find qualified candidates, improving efficiency and success rates. This technology also

minimizes biases and subjective judgments that may arise in human resource management, ensuring that the internal promotion process is fair and objective. By using an intelligent matching system, intelligent position matching can more effectively manage talent mobility, enhance employee job satisfaction, and provide career development opportunities. The continuous optimization and application of this technology are crucial means for improving human resource management efficiency and competitiveness.

Clear promotion channels: Clear Promotion Channels: Clear promotion channels provide employees with a transparent career development path and opportunities, which play a significant role in their career planning and work motivation. By establishing clear promotion mechanisms, employees can understand their growth potential and career direction within the organization, enhancing their engagement and loyalty. Digital technology plays a crucial role in creating and maintaining transparent and fair promotion systems. It can automatically record and analyze employee performance data, update and display career progress in real-time, making the promotion system more open, fair, and efficient.

In a transparent promotion system, evaluation criteria, promotion conditions, and procedural processes are clearly defined and made public. Employees can assess their performance against these standards, understanding the areas needing improvement. This transparency reduces uncertainty and suspicion in the promotion process, increasing employee trust and satisfaction with the organization. Additionally, clear promotion channels provide employees with specific goals and directions, stimulating their intrinsic motivation and work enthusiasm. Through digital technology, organizations can manage talent more precisely and efficiently. Automated performance evaluation systems can monitor and record employee performance in real-time, offering comprehensive and objective data to support fair promotion decisions. At the same time, digital promotion management systems can provide personalized training and development advice based on employees' individual development plans, helping them better achieve their career

goals. This not only enhances employees' professional skills and performance but also improves the overall efficiency and competitiveness of the organization.

The relationship between influencing factors

Unified hiring criteria and intelligent job matching: Unified hiring criteria provide the foundation and standards for intelligent job matching. Only after defining the recruitment standards and conditions for a position can the intelligent system accurately identify and evaluate candidates who meet the requirements, ensuring precision and effectiveness in matching.

Intelligent job matching and clear promotion channels: Intelligent job matching directly impacts employees' future career development and promotion opportunities. By optimizing the recruitment matching process, it ensures that each employee can maximize their potential in a position that suits their abilities and experience, thereby providing a solid foundation for future promotions.

Clear promotion channels and unified hiring criteria: Clear promotion channels must be built on unified hiring criteria to ensure fairness and transparency in promotion decisions. Unified criteria not only guide the recruitment process but also provide a stable and reliable basis for employees' career development and promotion.

4.2.1.6 For Compensation and Benefits Management

The relationship between the subject and influencing factors

Intelligent analysis of compensation and benefits: Intelligent analysis of compensation and benefits leverages data analytics and artificial intelligence to conduct a comprehensive evaluation of employee compensation and benefits data. This method helps human resources departments gain a deeper understanding of the rationality of current compensation structures, ensure the organization's competitiveness in the market, and assess employee satisfaction with existing compensation and benefits policies.

Intelligent analysis begins with a detailed categorization and organization of compensation data, including base salary, bonuses, allowances, and benefits. By comparing this data with market benchmarks, the intelligent system can

evaluate whether the organization's compensation levels are competitive and identify areas needing adjustment to attract and retain top talent. Besides external market comparisons, intelligent analysis also performs internal assessments of salary distribution across different departments and positions, ensuring fairness and rationality in the compensation structure. In terms of benefits, intelligent analysis collects and organizes employee feedback on various benefit programs. Through data mining techniques, it identifies the types of benefits employees value most and highlights deficiencies in the current benefits system. Additionally, intelligent analysis can predict future compensation trends, assisting managers in budgeting and planning ahead.

Personalized incentive measures: Personalized incentive measures use employees' performance data, personal preferences, and career development needs to create targeted incentive plans. These personalized incentives not only enhance employees' motivation and satisfaction but also boost their loyalty and sense of belonging, encouraging long-term contributions to the organization.

With digital technology and data analysis, managers can clearly see each employee's job performance, strengths, and areas needing improvement. This data provides a reliable foundation for developing personalized incentive plans. Different employees have varying needs and expectations regarding incentives; some may prioritize financial rewards, while others might value growth and development opportunities more. By understanding employees' personal preferences, managers can design incentives that better meet their needs, increasing the effectiveness of the incentives. Digital technology plays a critical role in the design and implementation of personalized incentive measures. Advanced data analysis tools enable managers to accurately capture employees' performance data and personal needs, allowing for the creation of scientific and reasonable incentive plans.

Intelligent policy analysis: Intelligent policy analysis uses data-driven methods, combining market research, industry standards, and internal data to develop and adjust compensation and benefits policies. It is not merely a simple decision-making process but a systematic approach aimed at ensuring fairness,

competitiveness, and the motivational impact of the compensation and benefits system. This approach allows organizations to better adapt to market changes and internal demands, achieving sustainable development.

Intelligent policy analysis relies heavily on detailed data support. Through market research, managers can understand the compensation levels and benefits standards within the industry, ensuring that their organization's compensation and benefits remain competitive. Internal data analysis helps organizations understand their compensation structure, employee satisfaction, and performance, allowing them to develop policies that are more aligned with actual conditions. Digital technology plays a crucial role in intelligent policy analysis. Modern data analysis and simulation tools can process vast amounts of complex data, helping decision-makers identify patterns and trends. Simulation tools can predict the potential impacts and effects of new policies before implementation, enabling more precise and rational decision-making. Intelligent policy analysis also involves the continuous adjustment and optimization of policies. Through ongoing data monitoring and feedback, managers can identify issues in policy implementation and make necessary adjustments to ensure the policies remain fair, competitive, and effective.

The relationship between influencing factors

Intelligent analysis of compensation and benefits and personalized incentive measures: Intelligent analysis of compensation and benefits and benefits provides a data foundation for personalized incentive measures. Through comprehensive analysis of compensation and benefits, we can understand employee needs and preferences, thereby designing more effective personalized incentive measures to enhance employee satisfaction and motivation.

Personalized Incentive Measures and intelligent policy analysis: Personalized incentive measures need to be based on intelligent policy analysis. Only with a rational foundation in compensation and benefits policies can personalized incentive measures be effectively implemented and operationalized.

Intelligent policy analysis provides frameworks and standards to ensure the fairness and reasonableness of personalized incentive measures.

Scientific Policy Formulation and intelligent analysis of compensation and benefits: Scientific policy formulation relies on the data support provided by intelligent analysis of compensation and benefits and benefits. Through intelligent analysis of compensation and benefits data, deficiencies and areas for improvement within policies can be identified, thereby enabling the formulation of more scientific and reasonable compensation and benefits policies.

4.2.2 Round 1: Expert Review of Decision Making Models for Human Resource Management

This part uses the Delphi method, and 21 experts evaluate the Decision Making Model for Human Resource Management. Among them, there are 7 Human Resource Management experts, 7 Information Technology experts, 7 Information Technology Management experts or Educational Management experts. 21 experts consultation forms were issued and all were recovered, with a recovery rate of 100%. This demonstrates a highly positive attitude and a high degree of engagement among the experts.

21 experts were invited to evaluate the model based on their academic expertise and experience. The options are "agree," "partly agree," or "disagree," with scores of 1, 0, and -1 respectively. If the experts select "Partly Agree" or "Disagree", they should provide an explanation or suggestion. The details were shown in Tables 4.31 and Table 4.32.

Table 4.31 Results of the first round of expert review of the Decision Making Model for Human Resource Management

Assessment Items	N	Freq	Percentage	S.D
Decision Making Model for Human Resource Management	21	17	80.95	0.3922

Table 4.32 Detailed results of the first round of expert review of the Decision Making Model for University Human Resource Management

Assessment Items	Expert Number	Expert Research Field	Effective			Expert Explanation
			Agree	Partly Agree	Disagree	
Decision Making Model for University Human Resource Management	1	Human Resource Management	1			
	2	Human Resource Management		0		The model should reflect the interrelationship between the six aspects of human resource management, and the relationship between them should be a two-way influence, rather than a one-way cycle.
	3	Human Resource Management	1			
	4	Human Resource Management	1			

Table 4.32 (Continue)

Assessment Items	Expert Number	Expert Research Field	Effective			Expert Explanation
			Agree	Partly Agree	Disagree	
Decision Making Model for University Human Resource Management	5	Human Resource Management	1			
	6	Human Resource Management		0		The interactions among the six elements, as well as their impact on enhancing human resource management, should be indicated with arrowheads.
	7	Human Resource Management	1			
	8	Information Technology	1			
	9	Information Technology	1			
	10	Information Technology	1			

Table 4.32 (Continue)

Assessment Items	Expert Number	Expert Research Field	Effective			Expert Explanation
			Agree	Partly Agree	Disagree	
Decision Making Model for	11	Information Technology	1			
University Human Resource	12	Information Technology	1			
Management	13	Information Technology	1			
	14	Information Technology	1			
	15	Information Technology Management	1			
	16	Information Technology Management		0		In order to provide clearer guidance for practice, the relationships between the various elements of the model need to be further refined.

Table 4.32 (Continue)

Assessment Items	Expert Number	Expert Research Field	Effective			Expert Explanation
			Agree	Partly Agree	Disagree	
Decision Making Model for University Human Resource Management	17	Information Technology Management	1			
	18	Information Technology Management	1			
	19	Educational Management	1			
	20	Educational Management		0		The degree of influence of each factor found in the research is different, and should be accounted for in the model by ranking or other means.
	21	Educational Management	1			

According to Table 4.32, among the 21 experts, 4 experts selected “partly agree” and gave explanations. Other experts agree. This shows that the overall coordination of expert opinions is relatively high. Based on the first round of expert opinions, the Decision Making Model for Human Resource Management was modified, optimized, and improved. Shown in Figure 4.2.



Figure 4.2 Modified HRM-DM model diagram

4.2.3 Modified model description:

4.2.3.1 This model further clarifies the logical relationship between “Personnel Information Management” “Personnel Recruitment Management” “Personnel Development Management” “Performance Assessment Management” “Internal Promotion Management” and “Compensation and Benefits Management”. Enhancing the level and efficiency of human resource management is the core of the decision making for Human Resource Management. The relationship between the six subjects should influence each other and jointly reflect the level and quality of Human Resource Management.

4.2.3.2 “Personnel Information Management-Personnel Recruitment Management” relationship: Personnel information management provides data support and analytical basis for personnel recruitment management, while personnel recruitment management enhances and optimizes the data in personnel information management through effective recruitment, creating a positive feedback loop that jointly improves the overall efficiency and effectiveness of human resource management.

4.2.3.3 “Personnel Information Management-Personnel Development Management” relationship: Personnel information management collects and stores detailed employee data, providing a foundation and basis for personnel development management to create personalized training and development plans. Personnel development management enhances employee skills and capabilities, continually updating and enriching the data in the personnel information management system, promoting ongoing employee growth and organizational development.

4.2.3.4 “Personnel Information Management-Performance Assessment Management” relationship: Personnel information management provides basic employee profiles and historical performance data, serving as a reliable assessment foundation for performance evaluation management. Performance evaluation management, through regular performance assessments, updates and enriches the

data in the personnel information management system to make it more comprehensive and dynamic.

4.2.3.5 “Personnel Recruitment Management-Internal Promotion Management” relationship: Personnel information management records and manages employees' qualifications and past performances, providing the basis and support for internal promotion management to identify and select suitable internal candidates. Internal promotion management assesses employees' potential and suitability, feeding back into the personnel information management system to promote career development and rational utilization of internal talents within the organization.

4.2.3.6 “Personnel Information Management-Compensation and Benefits Management” relationship: Personnel information management records and manages employees' compensation and benefits information, providing data support and a foundation for compensation and benefits management to ensure accurate implementation and administration of policies. Compensation and benefits management, based on data analysis from the personnel information management system, formulates and adjusts compensation and benefits strategies to meet organizational and employee needs, thereby maintaining competitiveness and employee satisfaction.

4.2.3.7 “Personnel Recruitment Management-Personnel Development Management” relationship: Personnel recruitment management attracts and selects suitable talents, providing a foundation for personnel development management to effectively train and develop new employees within the organization. Personnel development management enhances employee skills and capabilities through training and career planning, thereby supporting and optimizing the effectiveness of personnel recruitment management, creating a continuous development cycle.

4.2.3.8 “Personnel Recruitment Management-Performance Assessment Management” relationship: Personnel recruitment management ensures alignment of new employees' capabilities and potential with job requirements through precise

selection processes, providing a solid starting point and reference for performance evaluation management. Performance evaluation management, through regular assessments of employee performance, feeds back into recruitment strategies to optimize selection criteria and processes, further enhancing the efficiency and quality of personnel recruitment.

4.2.3.9 “Personnel Recruitment Management-Internal Promotion Management” relationship: Personnel recruitment management identifies and selects suitable internal candidates, providing an important talent pool for internal promotion management. Internal promotion management motivates and develops existing employees, while also integrating effectively with external recruitment, promoting the rational flow and development of internal talent within the organization.

4.2.3.10 “Personnel Recruitment Management-Compensation and Benefits Management” relationship: Personnel recruitment management attracts and retains talent by defining suitable compensation and benefits conditions, providing initial data and reference for the compensation and benefits management of new employees. Compensation and benefits management designs and adjusts compensation and benefits schemes based on market competition and organizational strategy to support smooth personnel recruitment management and long-term retention of employees.

4.2.3.11 “Personnel Development Management-Performance Assessment Management” relationship: Personnel development management enhances employee capabilities through training and development programs, providing a solid performance foundation and growth opportunities for performance evaluation management. Performance evaluation management, by assessing employee performance and growth, feeds back into personnel development management to adjust and optimize training plans, fostering continuous employee growth and organizational performance improvement.

4.2.3.12 “Personnel Development Management-Internal Promotion Management” relationship: Personnel development management enhances employee capabilities through training and development programs, providing mature and developed candidates for internal promotion management. Internal promotion management, by offering advancement opportunities and development paths, motivates employees to engage in growth opportunities, fostering effective utilization and enhancement of internal talent within the organization.

4.2.3.13 “Personnel Development Management-Compensation and Benefits Management” relationship: Personnel development management enhances employee capabilities and skills, directly influencing the formulation and adjustment of incentive measures in compensation and benefits management. Compensation and benefits management, based on employee development and contributions, designs and adjusts corresponding policies to foster ongoing employee development and satisfaction.

4.2.3.14 “Performance Assessment Management-Internal Promotion Management” relationship: Performance evaluation management provides objective criteria and references for internal promotion management by assessing employees' job performance and capabilities. Internal promotion management, in turn, indirectly influences and guides the execution and outcomes of performance evaluation management by defining promotion criteria and procedures.

4.2.3.15 “Performance Assessment Management-Compensation and Benefits Management” relationship: Performance evaluation management provides a fair basis for compensation and benefits management by assessing employee performance and serving as a reference for designing incentive mechanisms. Compensation and benefits management, based on performance evaluation results, formulates and adjusts employees' compensation and benefits to incentivize and reward outstanding performance.

4.2.3.16 “Internal Promotion Management” relationship-Compensation and Benefits Management” relationship: Internal promotion management, by defining criteria and opportunities for employee advancement, directly influences compensation and benefits management in adjusting employees' pay and benefits. Compensation and benefits management, in turn, adjusts employees' pay and benefits based on their promotions and performance, affecting the fairness of internal promotion management and employees' promotion motivation.

4.2.3.17 Based on the data analysis of expert survey feedback, the influencing factors were ranked according to their Median and IQR values, distinguishing their impact on human resource management. Following the ranking results, the importance of each factor was confirmed with experts. In the model, factors with smaller numbers have a greater impact.

4.2.3.18 In this model, all elements interact with each other. For example, Complete data storage and accurate data recording can effectively enhance the quality of personnel information management, promote the sharing of personnel information, and provide robust data support for policy formulation and strategy optimization in personnel recruitment management, personnel development management, performance evaluation management, internal promotion management, and compensation and benefits management. Therefore, this model emphasizes the interactions and dependencies between various elements in Human Resource Management practice.

4.2.4 Round 2: Expert Review of Decision Making Models for Human Resource Management

21 experts to re-evaluate the model based on their academic expertise and experience. As show in Table 4.33.

Table 4.33 Results of the second round of expert review of the Decision Making Model for Human Resource Management

Assessment Items	N	Freq	Percentage	S.D
Decision Making Model for Human Resource Management	21	21	100	0

According to Table 4.33, in this round of expert consultation, all experts agreed that the concentration rate reached 100%. This shows that experts highly recognize the Decision Making Model for Human Resource Management.

Phase 3: To evaluating the decision making model for Chinese universities human resource management in Sichuan.

Using the CIPP evaluation model, the researcher invited 9 experts with extensive experience in Human Resource Management, Information Technology, Information Technology Management or Educational Management to evaluate the model. The options are “agree,” “partly agree,” or “disagree,” assigned “1,” “0” and “-1” respectively. If the experts select “partly agree” or “disagree”, the should provide an explanation or clarification. The list of experts is included in the appendix. The evaluation results are shown in the appendix

According to The evaluation results, 9 experts evaluated the decision making model for university human resource management in Sichuan constructed in this research from 7 aspects and 19 categories. The results were unanimously recognized by all experts and have a high degree of consensus and credibility. This shows that the model constructed is reasonable, effective and feasible. The evaluation results are shown in Table 4.34.

Table 4.34 Expert Evaluation results with CIPP evaluation method

Evaluation Indicators	Specific Evaluation Contents	Feedback		
		Agree	Partly Agree	Disagree
Context Evaluation				
Background and Purpose	Do you agree that the model has a clear background and purpose, and can it fully and truly grasp the reality of university human resource management?	9 (100.00%)	0 (0.00%)	0 (0.00%)
	Do you agree with the role of Personnel Information Management, Personnel Recruitment Management, Personnel Development Management, Performance Assessment Management, Internal Promotion Management, and Compensation and Benefits Management in this model?	9 (100.00%)	0 (0.00%)	0 (0.00%)
Human resource management body	Do you agree that the design of this model fully considers the roles of the 6 aspects of management in university human resource management?	9 (100.00%)	0 (0.00%)	0 (0.00%)
	Do you agree that this model takes into account the needs and expectations of all stakeholders involved in university human resource management?	9 (100.00%)	0 (0.00%)	0 (0.00%)
	Do you agree that this model effectively reflects the roles and participation levels of each subject in university human resource management?	9 (100.00%)	0 (0.00%)	0 (0.00%)

Table 4.34 (Continue)

Evaluation Indicators	Specific Evaluation Contents	Feedback		
		Agree	Partly Agree	Disagree
Input Evaluation				
Problem Analysis	Do you agree that the problems existing in university human resource management have been fully considered?	9 (100.00%)	0 (0.00%)	0 (0.00%)
	Do you agree that the questions adequately reflect the diverse perspectives of human resource personnel, managers, university administrators, and research experts?	9 (100.00%)	0 (0.00%)	0 (0.00%)
Analysis of influencing factors	Do you agree that the summarized influencing factors adequately take into account the complexity and diversity of university human resource management?	9 (100.00%)	0 (0.00%)	0 (0.00%)
	Do you agree that decision making model for human resource management play a key role in improving the quality of university human resource management?	9 (100.00%)	0 (0.00%)	0 (0.00%)

Table 4.34 (Continue)

Evaluation Indicators	Specific Evaluation Contents	Feedback		
		Agree	Partly Agree	Disagree
Process Evaluation				
	Do you agree that the evaluation mechanism comprehensively covers all key links and important areas?	9 (100.00%)	0 (0.00%)	0 (0.00%)
Evaluation mechanism	Do you agree that the evaluation results of this model can be used to guide management practice and policy formulation?	9 (100.00%)	0 (0.00%)	0 (0.00%)
	Do you agree that the model can adapt to different management styles, needs and technology conditions?	9 (100.00%)	0 (0.00%)	0 (0.00%)
Feasibility of Model	Do you agree that this model is highly operable and usable?	9 (100.00%)	0 (0.00%)	0 (0.00%)
Implementation	Do you agree with the design of the relationships between the various elements in the decision making model for human resource management?	9 (100.00%)	0 (0.00%)	0 (0.00%)
Product Evaluation				
Model Feedback and Improvement	Do you agree that the feedback mechanism designed in this model is flexible and practical enough?	9 (100.00%)	0 (0.00%)	0 (0.00%)

Table 4.34 (Continue)

Evaluation Indicators	Specific Evaluation Contents	Feedback		
		Agree	Partly Agree	Disagree
Model Feedback and Improvement	Do you agree that the adjustment and improvement design of this model can improve its applicability?	9 (100.00%)	0 (0.00%)	0 (0.00%)
	Do you agree that the results from expert survey questionnaire are highly consistent with the literature review results for Objective 1, increasing confidence in the success of the model?	9 (100.00%)	0 (0.00%)	0 (0.00%)
	Do you agree that the application of decision making model for university human resource management can help reduce the probability of problems in university human resource management?	9 (100.00%)	0 (0.00%)	0 (0.00%)
	Do you agree that the application of decision making model for university human resource management can effectively improve university human resource management effectiveness?	9 (100.00%)	0 (0.00%)	0 (0.00%)

Chapter 5

Conclusion, Discussion and Recommendations

In this research, the researcher explored the current state of human resource management for Chinese universities in Sichuan province, and developed a decision making model for human resource management based on actual needs. In the research findings, the researchers put forward the following points.

Conclusion

1. Through literature review, the researcher investigated the problems and resolutions in human resource management in Chinese universities in Sichuan Province, and the result has been confirmed by an expert survey. The research found five main problems: First, the data management organization and policy standards need to be unified. Second, the application of big data technology needs to be strengthened. Third, the application of information technology needs to be deepened. Fourth, database technology needs to be improved. Fifth, the application of artificial intelligence technology needs to be enhanced. For the resolutions to solve these problems, 42 measures were highly recognized by experts. Additionally, this research examined the influencing factors of human resource management in Chinese universities and identified 18 factors that were highly acknowledged. These findings will serve as elements in constructing a decision making model for human resource management.

2. Constructing a decision making model for Chinese universities human resource management in Sichuan, six core subjects were identified: “Personnel Information Management”, “Personnel Recruitment Management”, “Personnel Development Management”, “Performance Assessment Management”, “Internal Promotion Management”, and “Compensation and Benefits Management”. The influencing factors include: for “Personnel Information Management”, the factors are complete data storage, accurate data recording, and smooth data sharing; for

“Personnel Recruitment Management”, the factors are intelligent recruitment strategies, automated recruitment process implementation, and intelligent candidate matching and screening; for “Personnel Development Management”, the factors are identification of training needs, personalized development of training plans, and reasonable allocation of resources; for “Performance Assessment Management”, the factors are intelligent performance assessment, in-depth analysis of performance data, and sound feedback mechanism; for “Internal Promotion Management”, the factors are unified hiring criteria, intelligent job matching, and clear promotion channels; for “Compensation and Benefits Management”, the factors are intelligent analysis of compensation and benefits, personalized incentive measures, and intelligent policy analysis. This research mainly explores the interrelationships between various subjects and the impact of each influencing factor on the respective subject. The diagram of the model has been presented in chapter 4.

3. Evaluating the results of human resource management, it was found that the model designed in this research is reasonable, effective and feasible, all elements in the model interact with each other. For example, complete data storage and accurate data recording can effectively enhance the quality of personnel information management, promote the sharing of personnel information, and provide robust data support for policy formulation and strategy optimization in personnel recruitment management, personnel development management, performance evaluation management, internal promotion management, and compensation and benefits management. Therefore, this model emphasizes the interactions and dependencies between various elements in human resource management practice.

Discussion

1. Ensuring data quality and security is central to decision making. This requires establishing stringent data management standards and policies, unifying data collection, storage, processing, and analysis procedures to ensure data accuracy, consistency, and integrity. Using cloud computing provides a scalable, reliable, and multifunctional platform, significantly enhancing data quality. This approach allows

for the integration and standardization of data from multiple sources, ensuring comprehensive and high-quality information for decision-making. This is consistent with Cai's (2021) theory of cloud computing. The use of data mining technology further refines this data, extracting valuable insights and supporting intelligent decision analysis, thus optimizing HR business processes and improving overall efficiency. This is consistent with Li's (2022) theory of data mining. Combining artificial intelligence (AI) methods enhances data analysis, communication, and information retrieval, effectively handling dynamic and heterogeneous data. Implementing robust encryption and decryption mechanisms, combined with user-defined functions and algorithms, ensures data confidentiality and prevents unauthorized access. Continuous monitoring and auditing of user behavior provide detailed control and traceability of database interactions, further enhancing security. Integrating Hadoop and other big data analysis frameworks with cloud computing platforms enables distributed processing of vast HR data, ensuring data normalization and integrity, addressing the shortcomings of traditional HR management systems in standardizing multi-source data. This is consistent with Yang's (2022) theory of data analysis.

2. To continuously optimize and upgrade the Human Resource Management Decision Making, the system requires regular assessment and updating of hardware, software, and adoption of the latest big data analytics technology and artificial intelligence algorithms to enhance performance and analytical capabilities. The system must possess high scalability and flexibility to adapt to rapid changes in management needs and technological environments, ensuring long-term stable operation and efficient functioning. Based on human resource management, DSS ensures continuous technological optimization through multiple integrations and iterations. The system collects and analyzes relevant resource data to identify utilization trends and patterns. Integration of data mining technology and cloud computing further enhances system capabilities. Data mining supports intelligent decision analysis to optimize HR business processes, while cloud computing provides support for multi-layered resource integration and sharing. This is consistent with Morin's (2023) theory of intelligent decision analysis. The system also integrates

feedback mechanisms for continuous improvement and refinement. In university personnel management, DSS uses decision models to forecast and analyze HR demand and promotions, ensuring rapid responsiveness to institutional needs. This is consistent with Li's (2022) theory of feedback mechanisms. Through regular reviews and updates based on feedback and new data, DSS maintains its effectiveness and relevance, achieving continuous optimization and technological upgrades.

3. Enhancing user training and feedback mechanisms is crucial for the successful operation of decision making. Regular training courses, workshops, and practical activities are essential to help users master system operation skills and best practices, ensuring they can fully utilize system functionalities. Additionally, establishing a robust user feedback mechanism to promptly collect and address user opinions and suggestions is necessary for continuously optimizing and improving system functionalities and user experience, thereby ensuring the system truly meets user needs and expectations. Integrating feedback mechanisms into DSS enhances comprehensibility and usability, as suggested by structured literature reviews emphasizing feedback's importance at conceptual, semantic, syntactic, and lexical levels in user interface design. Leveraging data mining techniques within DSS optimizes human resource processes, standardizes data, and provides intelligent decision analytics, thereby enhancing overall business efficiency and decision support. This is consistent with Li's (2022) theory of intelligent decision analytics. Providing feedback on performance improvement potential and corrective measures further aligns user mental models with DSS, fostering deeper learning and enhancing user confidence and proficiency. Furthermore, integrating AI technologies such as case-based reasoning and ontologies improves decision efficiency at operational and managerial levels, offering knowledge-based approaches to HR management. The evolution of DSS technology towards intelligent systems, including Active DSS, filters and manages overflow data, ensuring decisions are effective and tailored to user needs. This intelligent system approach supports unstructured HR processes like personnel deployment and training by providing structured, fair, and comprehensive decision support, processes often reliant on human judgment.

4. In the HRM-DM model designed by this research, the influencing factors for each element are ranked based on their impact on human resource management. Among the influencing factors for "Compensation and Benefits Management," the highest impact is attributed to "intelligent analysis of compensation and benefits," followed by "personalized incentive measures," while "intelligent policy analysis" has the lowest impact. This ranking differs from the conventional belief that policy is fundamental. Discussions with experts evaluating the model revealed that, due to the unique characteristics of Chinese society and the government's explicit regulatory constraints on university compensation and benefits, the compensation and benefits system in universities operates under these government policies and is inherently restrictive. As a result, the impact of compensation and benefits management in Chinese universities is relatively smaller compared to other countries.

Recommendations

1. Suggestions for using the research results

1.1 Implement Unified Data Management Standards: Universities should adopt standardized data management policies and procedures to ensure consistency and reliability across all HR management processes. This will facilitate smoother data integration and sharing, improving overall HR management efficiency.

1.2 Strengthen the Application of Big Data and AI Technologies: Invest in advanced big data analytics and AI technologies to enhance HR decision-making processes. This can help identify patterns, predict HR trends, and automate routine tasks, thereby increasing operational efficiency.

1.3 Deepen the Integration of Information Technology: Encourage deeper integration of information technology into existing HR management systems. This includes upgrading current IT infrastructure, adopting new software solutions, and training employees to effectively use these technologies for better management outcomes.

1.4 Enhance Database Technology and Management: Improve database technology to ensure the security, scalability, and efficiency of data storage and

retrieval. This will support more effective personnel information management, ensuring HR data is accurately and timely available for decision-making.

1.5 Develop Comprehensive Training and Development Programs: Universities should create personalized training and development programs based on actual needs, allocating resources appropriately to ensure continuous employee development and skill enhancement. This will elevate the overall level of HR management.

2. Suggestions for using the HRM-DM model

2.1 Implement Gradually with Pilot Programs: Before full implementation, it is recommended to select several universities for pilot programs. Through these pilot programs, collect feedback, make timely adjustments and optimizations to the model, ensuring its adaptability and effectiveness.

2.2 Enhance Training and Technical Support: Provide comprehensive training for relevant managers and technical personnel to familiarize them with the system's functions and operations. Additionally, establish a technical support team to promptly address issues that arise during use, ensuring smooth system operation.

2.3 Regular Evaluation and Optimization: Regularly evaluate the effectiveness of the model's use, analyzing the actual application of various functions and the improvements they bring. Based on the evaluation results, continuously optimize and upgrade the system to meet evolving needs and technological advancements.

2.4 Ensure Data Security and Privacy Protection: During use, strictly adhere to data security and privacy protection regulations to ensure the secure storage, transmission, and use of all HR data. Establish robust data security mechanisms to prevent data breaches and misuse.

2.5 Promote Cross-Departmental Collaboration: Encourage collaboration and communication between the HR department and other related departments (such as the IT department, finance department, etc.). Through cross-departmental collaboration, fully leverage the advantages of the decision making model, achieving information resource sharing and business process optimization.

3. Suggestions for next research

3.1 Long-term Follow-up Study on the Application Effects and Optimization Strategies of Human Resource Management Decision Support Systems: Future researchers are encouraged to conduct long-term follow-up studies on human resource management decision support systems. By continuously monitoring the application effects of the system over different time periods, they can analyze its performance and improvement needs in actual operations. Particular attention should be paid to the system's effectiveness in enhancing management efficiency, decision-making quality, and user satisfaction. Detailed usage data and feedback should be collected, and based on these data, specific optimization strategies should be proposed to ensure that the system can continuously adapt to changing demands and technological advancements, maximizing its effectiveness. Such long-term follow-up studies can provide valuable data on the actual effects of the system, aiding in its continuous improvement and ensuring its practical applicability and effectiveness in university human resource management.

3.2 In-depth Research on the Application of Big Data and Artificial Intelligence Technologies in University Human Resource Management: Future researchers are encouraged to deeply explore the specific applications of big data and artificial intelligence technologies in university human resource management. The research should include case studies on the practical applications of these technologies in areas such as personnel recruitment, performance evaluation, and training development, assessing their actual effects on improving management efficiency and optimizing decision-making processes. Empirical studies should analyze the challenges and bottlenecks in technology application and propose corresponding improvement suggestions. Additionally, the research should explore how technological means can enhance the accuracy of data analysis and the scientific nature of decision-making. This type of research can drive innovation in university HR management, providing forward-looking guidance to improve management efficiency and decision-making quality, with significant theoretical and practical implications.

3.3 Research on the Current Status and Future Development Directions of Human Resource Management Informatization in Universities: Future researchers are encouraged to conduct a detailed analysis of the current status of human resource management informatization in universities and explore its future development directions. The research should include the existing problems and challenges in informatization construction, best practice cases, and the impact of informatization on improving management efficiency and transparency. By comparing informatization construction in domestic and international universities, suitable informatization development strategies and implementation paths for different universities should be proposed. The research should also focus on the potential applications of emerging technologies (such as blockchain and IoT) in informatization construction and assess the innovations and transformations they may bring. This type of research can provide systematic guidance for the informatization transformation of university HR management, helping universities formulate scientific and reasonable informatization development plans and improve overall management levels.

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Appendices

Appendix A

List of Specialists and Letters of Specialists Invitation
for IOC Verification

List of Experts

List of experts to validate the survey questionnaire and evaluate lecturer interview forms

No.	Name	Work Unit	Title/Education	Research Field
1	Hou Yongcui	Sichuan Agricultural University	Doctor	Human Resource Management
2	Xu Longhua	Southwest University of Science and Technology	Professor	Human Resource Management
3	Jin Peng	Leshan Normal University	Professor/Doctor	Information Technology
4	Zhang Yi	Sichuan University	Professor/Doctor	Information Technology
5	Wang Tianfei	Leshan Normal University	Professor	Educational Management

List of experts to validate survey questionnaires and model

No.	Name	Work Unit	Title/Education	Research Field
1	Chen Guanggan	Sichuan Normal University	Doctor	Human Resource Management
2	Chen Xi	Southwest Minzu University	Assoc. Professor/Doctor	Human Resource Management
3	Deng Jian	Leshan Normal University	Professor	Human Resource Management
4	Huang Kai	Leshan Normal University	Assoc. Professor/Doctor	Human Resource Management
5	Song Xiaoxiao	Xihua University	Doctor	Human Resource Management

No.	Name	Work Unit	Title/Education	Research Field
6	Zhai Donghai	Southwest Jiaotong University	Doctor	Human Resource Management
7	Zhao Qi	Chengdu University	Professor	Human Resource Management
8	Gu Jin	Southwest Jiaotong University	Doctor	Information Technology
9	Shi Rui	Sichuan University of Science and Engineering	Doctor	Information Technology
10	Wang Ling	Sichuan Normal University	Assoc. Professor/Doctor	Information Technology
11	Wen Ruihan	Southwest Minzu University	Doctor	Information Technology
12	Yang Yi	Xihua University	Assoc. Professor	Information Technology
13	Yin Feng	Southwest Minzu University	Professor/Doctor	Information Technology
14	Zhou Nan	Chengdu University	Doctor	Information Technology
15	Hu Yi	Chengdu University	Professor/Doctor	Information Technology Management
16	Liu Caiming	Leshan Normal University	Professor/Doctor	Information Technology Management
17	Liu Tao	Sichuan Agricultural University	Doctor	Information Technology Management
18	Yang Shien	Southwest University of Science and Technology	Professor	Information Technology

No.	Name	Work Unit	Title/Education	Research Field
				Management
19	Liu Dengcai	Sichuan Agricultural University	Professor/Doctor	Educational Management
20	Qiao Junjie	Southwest Minzu University	Professor/Doctor	Educational Management
21	Su Weizhou	Southwest University of Science and Technology	Professor/Doctor	Educational Management

List of model evaluation experts

No.	Name	Work Unit	Title/Education	Research Field
1	Chen Yijun	Sichuan University of Science and Engineering	Professor	Human Resource Management
2	Nie Li	Leshan Normal University	Assoc. Professor	Human Resource Management
3	Wang Jianhua	Southwest Minzu University	Professor	Human Resource Management
4	Tang Yiqian	Chengdu University	Professor/Doctor	Information Technology
5	Wang Xiaoling	Sichuan University of Science and Engineering	Assoc. Professor	Information Technology
6	Zhang Yongqing	Chengdu University of Information Technology	Professor/Doctor	Information Technology
7	Dai Bo	Southwest University of Science and Technology	Professor/Doctor	Educational Management
8	Li Fangyu	Leshan Normal University	Professor	Educational Management

No.	Name	Work Unit	Title/Education	Research Field
9	Zhang Weili	Chengdu University of Information Technology	Professor/Doctor	Information Technology Management

Appendix B

Official Letter



Ref.No. MHESI 0643.14/ 1246

Bansomdejchaopraya Rajabhat University

1061 Itsaraparb Hirunrujee

Thonburi Bangkok 10600

28 June 2024

Subject: Invitation to validate research instrument

Dear Dr. Hou Yongcui, Sichuan Agricultural University

Miss. Deng Xin is a graduate student in Digital Technology Management for Education of Bansomdejchaopraya Rajabhat University. She is undertaking research entitled "Decision Support System Model for Human Resource Management for Chinese Universities in Sichuan"

The thesis advisory committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. In this regard, we would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Yours faithfully,

Assistant Professor Dr. Nukul Sarawong

(Dean of Graduate School)

Bansomdejchaopraya Rajabhat University

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Appendix C

Research Instrument

Research Instruments

1. Research expert survey questionnaire form
2. Research evaluation form
3. Expert survey form for the model designed
4. CIPP expert evaluation form

Research expert survey questionnaire

Subject

Decision Making Model for Chinese Universities Human Resource Management in Sichuan

.....

Research objective

To analyze the current problems and resolutions on Human Resource Management for Chinese Universities in Sichuan.

It is conducted by Deng Xin, a Ph.D. student in Digital Technology Management for Education Programme at Bansomdejchaopraya Rajabhat University under the supervision of

- 1.Assoc. Prof. Dr. Sombat Teekasap
- 2.Dr. Nainapas Injounjirakit
- 3.Assistant Professor Dr.Prapai Sridama

The following scale questions are the instrument for collecting data in 1st phase of the research, concerning about factors to analyze the current problems and resolutions on Human Resource Management for Chinese Universities in Sichuan. Please give your own opinion for each question. Data obtained from this questionnaire are only used for the purpose conducting aforementioned research and remain confidential. Individual or personal data presentation will be avoided. These questions are the instrument for collecting data in 1st phase of the research.

General information of the participants.

Directions: Please put \surd into the according to your own personal data.

1. Gender

Male Female

2. Professional title

Junior/Assistant Teachers Intermediate/Lecturer

Associate Senior/Associate Professor Full Senior/Professor

3. Position

Teacher/Researcher General staff for management

Head of administrative departments University administrator

4. Educational qualifications

undergraduate (adjective) Master's degree student

PhD student

5. Working years

A below 10 yrs. B. 10-20 yrs.

C. 20-25 yrs. D. over 25 yrs.

Analyze the current problems and resolutions on Human Resource Management for Chinese Universities in Sichuan.

Instructions: The type of questions are closed-ended questions and scale questions, you can select the options according to your actual situation. Your answers will only be used in this research and will not be disclosed individually.

Expert Survey Questionnaire

Part 1: The main problems on Human Resource Management for Chinese

Universities in Sichuan

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The data management organization and policy standards need to be unified						
1	Difficulties in personnel information data exchange and data redundancy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Incomplete recruitment data and difficult analysis affecting decision accuracy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Lack of training records and evaluation standards, making it hard to quantify investment and effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Inconsistent performance data standards and evaluation methods affecting fairness and accuracy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Lack of standardized job descriptions and demand analysis, leading to low hiring match rates.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Compensation and benefits policies lack scientific basis and uniform standards, resulting in low fairness and satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The application of big data technology needs to be strengthened						
7	Personnel information cannot extract effective insights and predictions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8	The recruitment process struggles to accurately match candidates, increasing time and cost.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Training plans lack personalization, with inefficient resource allocation and poor results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Performance analysis relies on traditional methods, resulting in less scientific evaluations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Decisions on job requirements and position matching are not precise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Compensation and benefits policies lack precision, leading to low employee satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The application of information technology needs to be deepened						
13	Personnel information lacks data integration and real-time updates, resulting in low efficiency in information management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Recruitment processes depend on manual methods, leading to low efficiency and poor user experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Employee training lacks personalized needs analysis and course recommendations, resulting in poor training effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Performance evaluations rely on	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	traditional methods, resulting in delayed and inaccurate data.					
17	Integration methods for job demands and talent matching are outdated, leading to less scientific decision-making.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Compensation and benefits management relies on manual processes and simple forms, affecting policy rationality and satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Database technology needs to be improved						
19	Information data storage efficiency is low, with slow query speeds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	The recruitment database lacks flexibility and scalability, leading to delayed and inaccurate decision-making.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	The training database cannot support complex recording and analysis, resulting in inefficient management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	The performance database struggles to meet personalized needs, leading to unfair and inaccurate evaluations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	The job database is incomplete and inconsistent, resulting in unscientific decision-making.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	The compensation and benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	database has poor security, resulting in low employee trust.					
The application of artificial intelligence technology needs to be enhanced						
25	Lack of analytical and predictive capabilities, unable to automatically extract personnel information and trends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Recruitment processes cannot automatically filter and match, resulting in low efficiency and accuracy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Lack of personalized learning recommendations, unable to automatically suggest suitable courses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	Performance evaluations lack intelligent analysis and recognition, resulting in shallow and unscientific results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Lack of intelligent job demand analysis and talent matching, leading to unscientific and inaccurate decision-making.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Inability to intelligently optimize compensation and benefits management, affecting policy precision and satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 2: The potential resolutions on Human Resource Management for Chinese Universities in Sichuan

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The data management organization and policy standards need to be unified						
31	Establish and promote unified personnel information storage standards and data formats to ensure smooth data exchange between departments and reduce information redundancy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Implement data quality management mechanisms to ensure data accuracy and completeness, reducing information redundancy and errors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Standardize candidate information collection in the recruitment process to ensure completeness and consistency, enhancing data quality and analysis reliability.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	Enhance data management for employee training records, establish comprehensive archives of training data to quantify and compare the effectiveness of different training programs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Design evaluation standards for training effectiveness, incorporating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	pre- and post-training skill assessments and job performance evaluations to objectively assess the impact and value of training.					
36	Develop unified standards for performance data collection and evaluation methods to ensure consistency and accuracy in performance evaluations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	Establish detailed and unified job description standards, introduce job requirement analysis tools or systems to facilitate accurate matching of recruitment needs and actual positions, reducing failure rates.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38	Regularly update and review job descriptions to ensure alignment with organizational development and talent needs, enhancing efficiency and accuracy in job appointments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	Establish a data system conducive to scientifically formulating compensation and benefits policies to ensure fairness in benefits and enhance employee satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
40	Develop unified compensation and benefits standards and processes to ensure policy transparency and consistency, preventing unfair practices and improving employee acceptance and satisfaction with benefits policies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The application of big data technology needs to be strengthened						
41	Introducing big data analytics platforms or tools to extract talent insights and predictive analytics from vast amounts of data helps identify potential high-value talents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	Integrating data from various sources facilitates comprehensive talent information integration and exploration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	Utilizing big data analytics technology for intelligent candidate screening and matching enhances recruitment precision and efficiency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44	Implementing data-driven recruitment decision strategies analyzes recruitment data to optimize processes and resource allocation, reducing recruitment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	cycles and costs.					
45	Providing personalized training recommendations and course suggestions based on employees' skills and career development needs using big data analysis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46	Analyzing training effectiveness and employee performance data to adjust and optimize personalized training plans maximizes training resource utilization and significantly improves training effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47	Using big data technology to analyze multidimensional employee performance data and trends provides objective, accurate performance evaluations and recommendations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48	Establishing real-time data monitoring and feedback mechanisms enables managers to track and adjust performance evaluation processes promptly, ensuring fairness and transparency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49	Introducing intelligent job demand analysis tools combined with big data analysis identifies and	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	forecasts future job demand trends, enhancing the scientific accuracy and precision of job appointment decisions.					
50	Implementing data-driven job matching automates recommending the best-matched candidates based on job requirements and employee skill characteristics, optimizing job appointment efficiency and quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51	Analyzing compensation data and employee benefit preferences using big data analysis tools to formulate scientifically-based compensation and benefits policies improves policy accuracy and employee satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52	Establishing dynamic adjustment mechanisms monitors the execution effectiveness and employee feedback of compensation and benefits policies through big data analysis, enabling timely strategy adjustments to maintain effectiveness and adaptability.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The application of information technology needs to be deepened						
53	Implementing comprehensive human resources information management ensures support for multiple data sources and real-time updates, enhancing efficiency and accuracy in information management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54	Deploying a complete recruitment management system integrates various online resources to improve recruitment efficiency and candidate experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55	Introducing artificial intelligence and big data analytics automate candidate screening and matching, reducing manual operations and enhancing the scientific accuracy and precision of recruitment decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56	Implementing intelligent employee learning management integrates employee skill profiles and career development plans to provide personalized training needs analysis and course recommendations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
57	Introducing advanced digital technologies provides immersive learning experiences and practical environments, enhancing training interactivity and attractiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58	Establishing a performance evaluation management system that supports diverse evaluation methods and customized evaluation criteria improves the accuracy and timeliness of evaluation data.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59	Using big data technology to analyze employee performance data identifies trends and optimization suggestions, enhancing the objectivity and scientific nature of the evaluation process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60	Implementing intelligent talent management combines big data analytics to automatically match the best candidates for different positions, enhancing the scientific accuracy and precision of recruitment decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61	Using intelligent analysis tools to quickly and accurately understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	and respond to recruitment needs optimizes recruitment processes and reduces human resource management costs.					
62	Implementing integrated compensation and benefits management supports various benefit schemes and flexible benefit options, enhancing the scientific nature of compensation and benefits policies and employee satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63	Introducing intelligent compensation analysis tools optimizes compensation based on data-driven decisions, increasing organizational attractiveness and retention rates for talent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Database technology needs to be improved						
64	Redesign and optimize the database system to improve data storage efficiency and query speed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65	Introduce caching mechanisms and optimize indexing to reduce data retrieval time, enhancing real-time information management efficiency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
66	Develop customized recruitment modules to allow quick configuration and adjustment of recruitment processes to meet changing recruitment needs and data growth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
67	Implement comprehensive learning management to support recording and managing various forms of training.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68	Conduct in-depth analysis of training data through data analysis tools to evaluate training effectiveness and optimize resource allocation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
69	Update performance evaluation systems to support customized evaluation metrics and scoring criteria, adapting to specific needs of different departments and positions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70	Introduce flexible evaluation modules to allow adjustment and optimization of evaluation processes, enhancing fairness and accuracy of evaluation results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
71	Unified job description and position requirement management to ensure integrity and consistency in information input and updates.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
72	Implement automated data validation and audit mechanisms to promptly identify and correct inaccuracies, improving the scientific accuracy and precision of hiring decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
73	Strengthen security measures of the compensation and benefits database, including data encryption, access control, and real-time monitoring.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
74	Implement regular data backup and recovery strategies to mitigate risks of accidental data loss or damage, enhancing reliability of compensation and benefits management and employee trust.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The application of artificial intelligence technology needs to be enhanced						
75	Introducing artificial intelligence and machine learning algorithms to analyze talent information in big data, extract key talent characteristics and trend analysis,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	supporting talent prediction and strategic planning.					
76	Introducing intelligent talent analysis tools, integrating natural language processing (NLP) and data mining technology, automating the identification and evaluation process of key talents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
77	Implementing intelligent personnel recruitment management to achieve automatic resume screening and smart matching of candidates, improving recruitment efficiency and accuracy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
78	Developing machine learning-based recruitment recommendation engines to automatically recommend the best-matched candidates based on job requirements and candidate skills and experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
79	Implementing intelligent learning management to personalize recommendations for suitable training courses and learning paths based on employees' learning history, interests, and abilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
80	Combining data analysis to continuously optimize learning content and resource allocation, enhancing training effectiveness and employee development quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
81	Introducing artificial intelligence algorithms to analyze performance data, identify and predict performance patterns, uncover hidden performance trends, and associated factors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
82	Using machine learning technology to establish personalized performance evaluation models, supporting fair evaluations across departments and positions, and providing real-time feedback and improvement suggestions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
83	Introducing intelligent job demand analysis tools to automatically match job requirements with candidate skills and experience using big data and machine learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
84	Combining data mining technology to analyze historical recruitment data and successful cases,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	optimizing the recruitment decision-making process to enhance scientific accuracy and precision.					
85	Introducing intelligent compensation management, combining machine learning and predictive analytics to automatically identify salary inequalities and potential welfare optimization opportunities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
86	Introducing intelligent compensation adjustment tools to automatically recommend fair and reasonable salary adjustment plans based on performance data, enhancing employee satisfaction and system accuracy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 3: The factors influencing Human Resource Management for Chinese Universities in Sichuan

No.	Issue	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Personnel Information Management						
87	Unified data management standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
88	Complete data storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
89	Accurate data recording	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
90	Smooth data sharing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
91	Secure data management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personnel Recruitment Management						
92	Personalized recruitment process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
93	Intelligent recruitment strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
94	Unified data storage management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
95	Automated recruitment process implementation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
96	Intelligent candidate matching and screening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personnel Development Management						
97	Investment in information technology resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
98	Identification of training needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
99	Personalized development of training plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
100	Reasonable allocation of resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
101	Targeted guidance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Performance Assessment Management						
102	Intelligent performance assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
103	Accurate data management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
104	In-depth analysis of performance data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
105	Unified assessment standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
106	Sound feedback mechanism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internal Promotion Management						
107	Unified hiring criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
108	Complete data information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
109	Intelligent job matching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
110	Transparent decision-making process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
111	Clear promotion channels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compensation and Benefits Management						
112	Centralized unified data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Issue	Feedback				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	management					
113	Intelligent analysis of compensation and benefits data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
114	Personalized incentive measures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
115	Intelligent policy analysis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
116	Fair compensation and benefits system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for your kind cooperation for completing the questions.

Expert survey questionnaire for "Current Problems and Resolutions on University Human Resource Management system"

Objective1: To analyze the current problems and resolutions on Human Resource Management for Chinese Universities in Sichuan.

Dear esteemed expert,

Greetings!

I am currently conducting research on "Decision Making Model for Chinese Universities Human Resource Management in Sichuan" in the early stage. Through literature review, I understand the current problems and resolutions on Human Resource Management for Chinese Universities. Based on this, I have constructed a expert survey questionnaire for "Current problems and resolutions on Human Resource Management for Chinese Universities in Sichuan" and sincerely invite you to evaluate it.

Here are some instructions:

1.The options are "Agree", "Partly Agree", or "Disagree", Please mark the appropriate option with a checkmark ("√") based on your understanding. if you choose "Partly Agree" or "Disagree", please provide explanations or comments for my improvement.

2.The results of this survey will be used for scientific research, and my investigation will not have any negative impact on you personally or your organization.

Thank you for your assistance and support!

Aspects Evaluated	Evaluate the Content	Effective			
		Agree	Partly Agree	Disagree	Explanation or Suggestion
Question validity	The questions are closely aligned with the research objectives, and the quantity is reasonable.				
Clarity of Expression	The expression is appropriate, clear, unambiguous and targeted.				
Completeness of Content	The content is relatively comprehensive and covers issues related to Human Resource Management for Chinese universities in Sichuan.				
procedural regularity	Information collection, sorting, analysis and other processes are standardized.				
effectiveness of conclusions	The conclusions drawn regarding current problems and resolutions on Human Resource Management for Chinese universities in Sichuan are valid.				

Decision making model for Chinese universities human resource management

Expert Survey Form

Objective2: To design the decision making model for Chinese universities human resource management.

Dear esteemed expert,

Greetings!

I am currently conducting preliminary research on "Development of Decision Making Model for Chinese Universities Human Resource Management in Sichuan". I have conducted literature reviews, expert surveys, and expert evaluations to understand the current problems, resolutions, and influencing factors in the human resource management in universities. Based on this, I have built a decision making model for university human resource management and sincerely invite you to evaluate it.

Here are some instructions:

1.The options are "Agree", "Partly Agree", or "Disagree", Please mark the appropriate option with a checkmark ("√") based on your understanding. if you choose "Partly Agree" or "Disagree", please provide explanations or comments for my improvement.

2.The results of this survey will be used for scientific research, and the investigation will not have any negative impact on you personally or your organization

Thank you for your assistance and support!

Project	Score	Opinion	Choice	Needs improvement
DM model for HRM in universities	+1	Agree		
	0	Partly Agree		
	-1	Disagree		

CIPP Expert Evaluation Form

Objective3: To evaluating the decision making model for Chinese universities human resource management.

Dear esteemed expert,.

Greetings!

I am currently conducting research on “Development of Decision Making Model for Chinese Universities Human Resource Management in Sichuan”. Through literature research, expert surveys and evaluation, I have mastered the current problems, resolutions and influencing factors of human resource management in universities. Based on this, I have built an decision making model for university human resource management, and I sincerely invite you to evaluate it.

The relevant instructions are as follows:

1.Options include "Agree", "Partly Agree", or "Disagree", corresponding to scores of 1, 0, and -1, respectively. Please mark the appropriate option with a checkmark ("v") based on your opinion. If you choose "Partly Agree" or "Disagree", please provide explanations or comments to help me make improvements.

2.The results of this survey will be utilized for scientific research, and your participation will not have any negative impact on you personally or on your organization.

Thank you for your assistance and support!

Before you evaluate, please allow me to introduce the process of this research:

Step 1: To analysis of current problems and resolutions in human resource management system.

21 participants were invited to investigate the current problems, resolutions and influencing factors in human resource management system. The questionnaire had been evaluated by 5 experts. (Please see the attachment for specific content of the survey and evaluation results.)

Step 2: Evaluate the problems, resolutions and influencing factors in university human resource management, and design an decision making model.

Based on the above research conclusions, a decision making model for human resource management (HRM-DM for short) was designed. See Figure 1 for details.



Figure 1 HRM-DM model diagram

Step 3: Expert evaluation and improvement of the model

21 experts were invited to survey the model. 4 experts provided modification opinions, and all the other experts agreed. Revise the model based on experts' opinion. See Figure 2 for details.

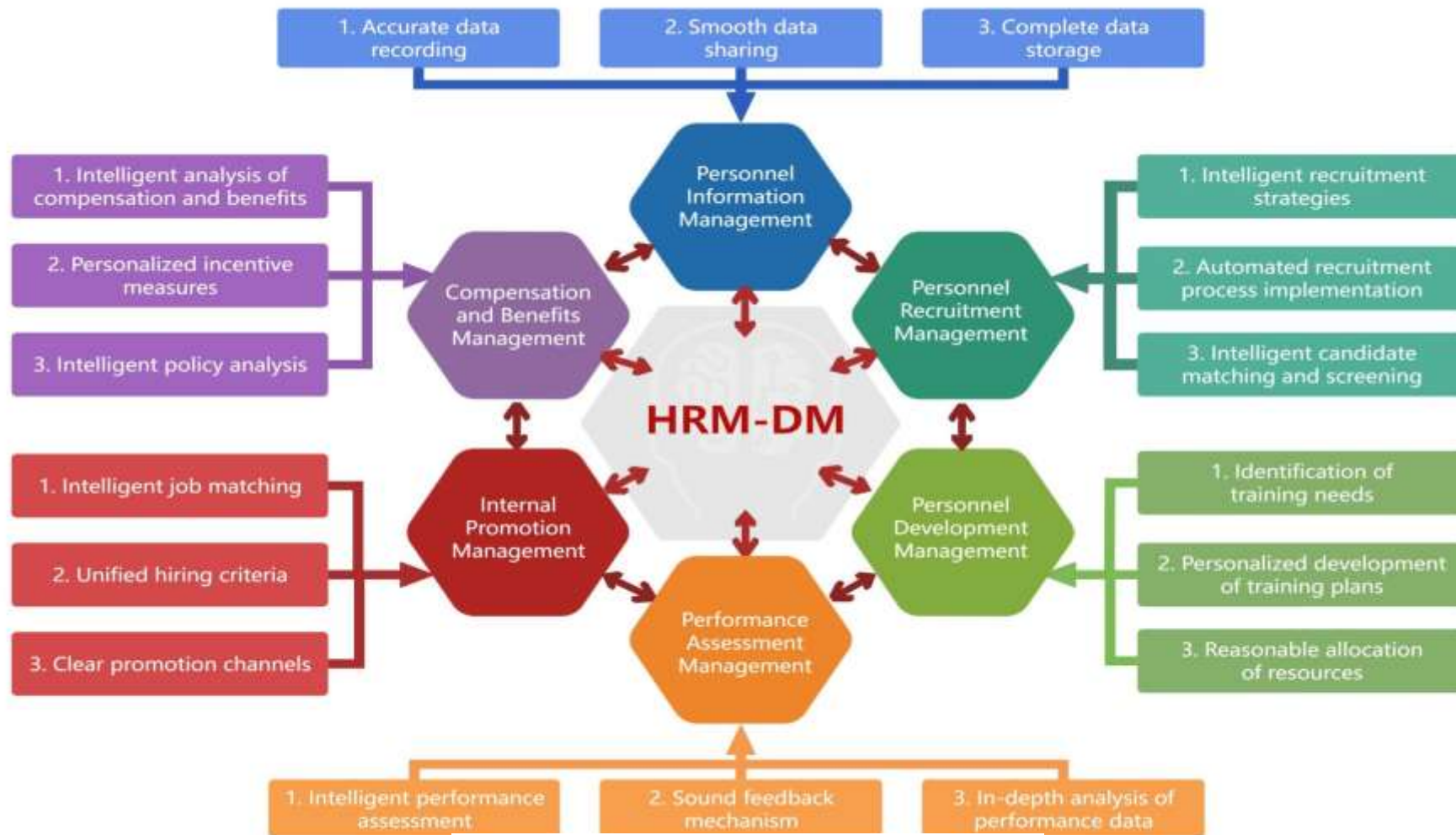


Figure 2 Modified HRM-DM model diagram

The modified decision making model for human resource management was sent to 21 experts again, and the results showed that all experts agreed with the modified model.

Now I am inviting you to evaluate the model, Options include "Agree", "Partly Agree", or "Disagree", corresponding to scores of 1, 0, and -1, respectively. Please check the appropriate options based on your opinion. if you choose "Partly Agree" or "Disagree", please provide explanations or comments to help me make improvements.

Expert Evaluation Form

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Effective			
			Agree	Partly Agree	Disagree	Explanation or Suggestions
Context Evaluation	Background and Purpose	Do you agree that the model has a clear background and purpose, and can it fully and truly grasp the reality of university human resource management?				
Context Evaluation		Do you agree with the role of Personnel Information Management, Personnel Recruitment Management, Personnel Development Management, Performance Assessment Management, Internal Promotion Management, and Compensation and Benefits Management in this model?				
	Human resource	Do you agree that the design of this model fully				

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Effective			
			Agree	Partly Agree	Disagree	Explanation or Suggestions
	management body	considers the roles of the 6 aspects of management in university human resource management?				
		Do you agree that this model takes into account the needs and expectations of all stakeholders involved in university human resource management?				
		Do you agree that this model effectively reflects the roles and participation levels of each subject in university human resource management?				
Input Evaluation	Problem Analysis	Do you agree that the problems existing in university human resource management have been fully considered?				
		Do you agree that the questions adequately reflect the				

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Effective			
			Agree	Partly Agree	Disagree	Explanation or Suggestions
CIPP Evaluation	Analysis of influencing factors	diverse perspectives of human resource personnel, managers, university administrators, and research experts?				
		Do you agree that the summarized influencing factors adequately take into account the complexity and diversity of university human resource management?				
		Do you agree that decision making model for human resource management play a key role in improving the quality of university human resource management?				
Process Evaluation	Evaluation mechanism	Do you agree that the evaluation mechanism comprehensively covers all key links and important areas?				
		Do you agree that the evaluation results of this model				

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Effective			
			Agree	Partly Agree	Disagree	Explanation or Suggestions
		can be used to guide management practice and policy formulation?				
		Do you agree that the model can adapt to different management styles, needs and technology conditions?				
		Feasibility of Model Implementation	Do you agree that this model is highly operable and usable?			
		Do you agree with the design of the relationships between the various elements in the decision making model for human resource management?				
	Product Evaluation	Model Feedback and Improvement	Do you agree that the feedback mechanism designed in this model is flexible and practical enough?			

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Effective			
			Agree	Partly Agree	Disagree	Explanation or Suggestions
		Do you agree that the adjustment and improvement design of this model can improve its applicability?				
		Do you agree that the results from expert survey questionnaire are highly consistent with the literature review results for Objective 1, increasing confidence in the success of the model?				
		Do you agree that the application of decision making model for university human resource management can help reduce the probability of problems in university human resource management?				
		Do you agree that the application of decision making				

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Effective			
			Agree	Partly Agree	Disagree	Explanation or Suggestions
		model for university human resource management can effectively improve university human resource management effectiveness?				

Appendix D

The Results of the Quality Analysis of Research Instruments

The Results of the Quality Analysis of Research Instruments

1. Evaluation results of IOC for the expert survey questionnaire
2. Evaluation results of IOC for the CIPP Expert Evaluation Form

Evaluation results of IOC for the expert survey questionnaire

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
General information of the interviewee	Directions: Please put \surd into the <input type="checkbox"/> according to your own personal data.								
1	Gender <input type="checkbox"/> Male <input type="checkbox"/> Female	1	1	1	1	1	5	1	Valid
2	Professional title <input type="checkbox"/> Junior/Assistant Teachers <input type="checkbox"/> Intermediate/Lecturer <input type="checkbox"/> Associate Senior/Associate Professor <input type="checkbox"/> Full Senior/Professor	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
3	Position <input type="checkbox"/> Teacher/Researcher <input type="checkbox"/> General staff for management <input type="checkbox"/> Head of administrative departments <input type="checkbox"/> University administrator	1	1	1	1	1	5	1	Valid
4	Educational qualifications <input type="checkbox"/> undergraduate (adjective) <input type="checkbox"/> Master's degree student <input type="checkbox"/> PhD student	1	1	1	1	1	5	1	Valid
5	Working years <input type="checkbox"/> A below 10 yrs. <input type="checkbox"/> B. 10-20 yrs.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	<input type="checkbox"/> C. 20-25 yrs. <input type="checkbox"/> D. over 25 yrs.								
Expert survey questionnaire	The type of questions are scale questions, you can select the options according to your actual situation.								
	Part 1: The main problems on Human Resource Management for Chinese Universities in Sichuan								
	The data management organization and policy standards need to be unified								
1	Difficulties in personnel information data exchange and data redundancy.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
7	Personnel information cannot extract effective insights and predictions.	1	1	1	1	1	5	1	Valid
8	The recruitment process struggles to accurately match candidates, increasing time and cost.	1	1	1	1	1	5	1	Valid
9	Training plans lack personalization, with inefficient resource allocation and poor results.	1	1	1	1	1	5	1	Valid
10	Performance analysis relies on traditional methods, resulting in less scientific evaluations.	1	1	1	1	1	5	1	Valid
11	Decisions on job requirements and position matching are not precise.	1	1	1	1	1	5	1	Valid
12	Compensation and benefits policies lack precision, leading to low employee satisfaction.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	The application of information technology needs to be deepened								
13	Personnel information lacks data integration and real-time updates, resulting in low efficiency in information management.	1	1	1	1	1	5	1	Valid
14	Recruitment processes depend on manual methods, leading to low efficiency and poor user experience.	1	1	1	1	1	5	1	Valid
15	Employee training lacks personalized needs analysis and course recommendations, resulting in poor training effectiveness.	1	1	1	1	1	5	1	Valid
16	Performance evaluations rely on traditional methods, resulting in delayed and inaccurate data.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
17	Integration methods for job demands and talent matching are outdated, leading to less scientific decision-making.	1	1	1	1	1	5	1	Valid
18	Compensation and benefits management relies on manual processes and simple forms, affecting policy rationality and satisfaction.	1	1	1	1	1	5	1	Valid
	Database technology needs to be improved								
19	Information data storage efficiency is low, with slow query speeds.	1	1	1	1	1	5	1	Valid
20	The recruitment database lacks flexibility and scalability, leading to delayed and inaccurate decision-making.	1	1	1	1	1	5	1	Valid
21	The training database cannot support complex recording and analysis, resulting in inefficient management.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
22	The performance database struggles to meet personalized needs, leading to unfair and inaccurate evaluations.	1	1	1	1	1	5	1	Valid
23	The job database is incomplete and inconsistent, resulting in unscientific decision-making.	1	1	1	1	1	5	1	Valid
24	The compensation and benefits database has poor security, resulting in low employee trust.	1	1	1	1	1	5	1	Valid
	The application of artificial intelligence technology needs to be enhanced								
25	Lack of analytical and predictive capabilities, unable to automatically extract personnel information and trends.	1	1	1	1	1	5	1	Valid
26	Recruitment processes cannot automatically filter and match, resulting in low efficiency and accuracy.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
31	Establish and promote unified personnel information storage standards and data formats to ensure smooth data exchange between departments and reduce information redundancy.	1	1	1	1	1	5	1	Valid
32	Implement data quality management mechanisms to ensure data accuracy and completeness, reducing information redundancy and errors.	1	1	1	1	1	5	1	Valid
33	Standardize candidate information collection in the recruitment process to ensure completeness and consistency, enhancing data quality and analysis reliability.	1	1	1	1	1	5	1	Valid
34	Enhance data management for employee training records, establish comprehensive archives of training data to quantify and compare the effectiveness of different training programs.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
35	Design evaluation standards for training effectiveness, incorporating pre- and post-training skill assessments and job performance evaluations to objectively assess the impact and value of training.	1	1	1	1	1	5	1	Valid
36	Develop unified standards for performance data collection and evaluation methods to ensure consistency and accuracy in performance evaluations.	1	1	1	1	1	5	1	Valid
37	Establish detailed and unified job description standards, introduce job requirement analysis tools or systems to facilitate accurate matching of recruitment needs and actual positions, reducing failure rates.	1	1	1	1	1	5	1	Valid
38	Regularly update and review job descriptions to ensure alignment with organizational development and talent	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	needs, enhancing efficiency and accuracy in job appointments.								
39	Establish a data system conducive to scientifically formulating compensation and benefits policies to ensure fairness in benefits and enhance employee satisfaction.	1	1	1	1	1	5	1	Valid
40	Develop unified compensation and benefits standards and processes to ensure policy transparency and consistency, preventing unfair practices and improving employee acceptance and satisfaction with benefits policies.	1	1	1	1	1	5	1	Valid
	The application of big data technology needs to be strengthened								
41	Introducing big data analytics platforms or tools to extract talent insights and predictive analytics from vast amounts of	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	data helps identify potential high-value talents.								
42	Integrating data from various sources facilitates comprehensive talent information integration and exploration.	1	1	1	1	1	5	1	Valid
43	Utilizing big data analytics technology for intelligent candidate screening and matching enhances recruitment precision and efficiency.	1	1	1	1	1	5	1	Valid
44	Implementing data-driven recruitment decision strategies analyzes recruitment data to optimize processes and resource allocation, reducing recruitment cycles and costs.	1	1	1	1	1	5	1	Valid
45	Providing personalized training recommendations and course suggestions based on employees' skills and career development needs using big data analysis.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
46	Analyzing training effectiveness and employee performance data to adjust and optimize personalized training plans maximizes training resource utilization and significantly improves training effectiveness.	1	1	1	1	1	5	1	Valid
47	Using big data technology to analyze multidimensional employee performance data and trends provides objective, accurate performance evaluations and recommendations.	1	1	1	1	1	5	1	Valid
48	Establishing real-time data monitoring and feedback mechanisms enables managers to track and adjust performance evaluation processes promptly, ensuring fairness and transparency.	1	1	1	1	1	5	1	Valid
49	Introducing intelligent job demand analysis tools combined with big data analysis identifies and forecasts future job	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	demand trends, enhancing the scientific accuracy and precision of job appointment decisions.								
50	Implementing data-driven job matching automates recommending the best-matched candidates based on job requirements and employee skill characteristics, optimizing job appointment efficiency and quality.	1	1	1	1	1	5	1	Valid
51	Analyzing compensation data and employee benefit preferences using big data analysis tools to formulate scientifically-based compensation and benefits policies improves policy accuracy and employee satisfaction.	1	1	1	1	1	5	1	Valid
52	Establishing dynamic adjustment mechanisms monitors the execution effectiveness and employee feedback of compensation and benefits policies through big data analysis,	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	enabling timely strategy adjustments to maintain effectiveness and adaptability.								
	The application of information technology needs to be deepened								
53	Implementing comprehensive human resources information management ensures support for multiple data sources and real-time updates, enhancing efficiency and accuracy in information management.	1	1	1	1	1	5	1	Valid
54	Deploying a complete recruitment management system integrates various online resources to improve recruitment efficiency and candidate experience.	1	1	1	1	1	5	1	Valid
55	Introducing artificial intelligence and big data analytics automate candidate screening and matching, reducing	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	manual operations and enhancing the scientific accuracy and precision of recruitment decisions.								
56	Implementing intelligent employee learning management integrates employee skill profiles and career development plans to provide personalized training needs analysis and course recommendations.	1	1	1	1	1	5	1	Valid
57	Strengthen staff information literacy training, improve staff information technology level.	1	0	1	1	1	5	0.8	Modify
58	Establishing a performance evaluation management system that supports diverse evaluation methods and customized evaluation criteria improves the accuracy and timeliness of evaluation data.	1	1	1	1	1	5	1	Valid
59	Using big data technology to analyze employee performance	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	data identifies trends and optimization suggestions, enhancing the objectivity and scientific nature of the evaluation process.								
60	Implementing intelligent talent management combines big data analytics to automatically match the best candidates for different positions, enhancing the scientific accuracy and precision of recruitment decisions.	1	1	1	1	1	5	1	Valid
61	Using intelligent analysis tools to quickly and accurately understand and respond to recruitment needs optimizes recruitment processes and reduces human resource management costs.	1	1	1	1	1	5	1	Valid
62	Implementing integrated compensation and benefits management supports various benefit schemes and flexible	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	benefit options, enhancing the scientific nature of compensation and benefits policies and employee satisfaction.								
63	Introducing intelligent compensation analysis tools optimizes compensation based on data-driven decisions, increasing organizational attractiveness and retention rates for talent.	1	1	1	1	1	5	1	Valid
	Database technology needs to be improved								
64	Redesign and optimize the database system to improve data storage efficiency and query speed.	1	1	1	1	1	5	1	Valid
65	Introduce caching mechanisms and optimize indexing to reduce data retrieval time, enhancing real-time information management efficiency.	1	1	1	1	1	5	1	Valid
66	Develop customized recruitment modules to allow quick	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	configuration and adjustment of recruitment processes to meet changing recruitment needs and data growth.								
67	Implement comprehensive learning management to support recording and managing various forms of training.	1	1	1	1	1	5	1	Valid
68	Conduct in-depth analysis of training data through data analysis tools to evaluate training effectiveness and optimize resource allocation.	1	1	1	1	1	5	1	Valid
69	Update performance evaluation systems to support customized evaluation metrics and scoring criteria, adapting to specific needs of different departments and positions.	1	1	1	1	1	5	1	Valid
70	Introduce flexible evaluation modules to allow adjustment and optimization of evaluation processes, enhancing fairness and accuracy of evaluation results.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
71	Unified job description and position requirement management to ensure integrity and consistency in information input and updates.	1	1	1	1	1	5	1	Valid
72	Implement automated data validation and audit mechanisms to promptly identify and correct inaccuracies, improving the scientific accuracy and precision of hiring decisions.	1	1	1	1	1	5	1	Valid
73	Strengthen security measures of the compensation and benefits database, including data encryption, access control, and real-time monitoring.	1	1	1	1	1	5	1	Valid
74	Implement regular data backup and recovery strategies to mitigate risks of accidental data loss or damage, enhancing reliability of compensation and benefits management and employee trust.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	The application of artificial intelligence technology needs to be enhanced								
75	Introducing artificial intelligence and machine learning algorithms to analyze talent information in big data, extract key talent characteristics and trend analysis, supporting talent prediction and strategic planning.	1	1	1	1	1	5	1	Valid
76	Introducing intelligent talent analysis tools, integrating natural language processing (NLP) and data mining technology, automating the identification and evaluation process of key talents.	1	1	1	1	1	5	1	Valid
77	Implementing intelligent personnel recruitment management to achieve automatic resume screening and smart matching of candidates, improving recruitment efficiency and accuracy.	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
78	Developing machine learning-based recruitment recommendation engines to automatically recommend the best-matched candidates based on job requirements and candidate skills and experience.	1	1	1	1	1	5	1	Valid
79	Implementing intelligent learning management to personalize recommendations for suitable training courses and learning paths based on employees' learning history, interests, and abilities.	1	1	1	1	1	5	1	Valid
80	Combining data analysis to continuously optimize learning content and resource allocation, enhancing training effectiveness and employee development quality.	1	1	1	1	1	5	1	Valid
81	Introducing artificial intelligence algorithms to analyze performance data, identify and predict performance patterns,	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	uncover hidden performance trends, and associated factors.								
82	Using machine learning technology to establish personalized performance evaluation models, supporting fair evaluations across departments and positions, and providing real-time feedback and improvement suggestions.	1	1	1	1	1	5	1	Valid
83	Introducing intelligent job demand analysis tools to automatically match job requirements with candidate skills and experience using big data and machine learning.	1	1	1	1	1	5	1	Valid
84	Combining data mining technology to analyze historical recruitment data and successful cases, optimizing the recruitment decision-making process to enhance scientific accuracy and precision.	1	1	1	1	1	5	1	Valid
85	Introducing intelligent compensation management,	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
	combining machine learning and predictive analytics to automatically identify salary inequalities and potential welfare optimization opportunities.								
86	Introducing intelligent compensation adjustment tools to automatically recommend fair and reasonable salary adjustment plans based on performance data, enhancing employee satisfaction and system accuracy.	1	1	1	1	1	5	1	Valid
	Part 3: The factors influencing Human Resource Management for Chinese Universities in Sichuan								
	Personnel Information Management								
87	Unified data management standards	1	1	1	1	1	5	1	Valid
88	Complete data storage	1	1	1	1	1	5	1	Valid
89	Accurate data recording	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
90	Smooth data sharing	1	1	1	1	1	5	1	Valid
91	Secure data management	1	1	1	1	1	5	1	Valid
	Personnel Recruitment Management								
92	Personalized recruitment process	1	1	1	1	1	5	1	Valid
93	Intelligent recruitment strategies	1	1	1	1	1	5	1	Valid
94	Unified data storage management	1	1	1	1	1	5	1	Valid
95	Automated recruitment process implementation	1	1	1	1	1	5	1	Valid
96	Intelligent candidate matching and screening	1	1	1	1	1	5	1	Valid
	Personnel Development Management								
97	Investment in information technology resources	1	1	1	1	1	5	1	Valid
98	Identification of training needs	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
99	Personalized development of training plans	1	1	1	1	1	5	1	Valid
100	Reasonable allocation of resources	1	1	1	1	1	5	1	Valid
101	Targeted guidance	1	1	1	1	1	5	1	Valid
	Performance Assessment Management								
102	Intelligent performance assessment	1	1	1	1	1	5	1	Valid
103	Accurate data management	1	1	1	1	1	5	1	Valid
104	In-depth analysis of performance data	1	1	1	1	1	5	1	Valid
105	Unified assessment standards	1	1	1	1	1	5	1	Valid
106	Sound feedback mechanism	1	1	1	1	1	5	1	Valid
	Internal Promotion Management								
107	Unified hiring criteria	1	1	1	1	1	5	1	Valid

No.	Item	Expert					Total	IOC	Result
		1	2	3	4	5			
108	Complete data information	1	1	1	1	1	5	1	Valid
109	Intelligent job matching	1	1	1	1	1	5	1	Valid
110	Transparent decision-making process	1	1	1	1	1	5	1	Valid
111	Clear promotion channels	1	1	1	1	1	5	1	Valid
	Compensation and Benefits Management								
112	Centralized unified data management	1	1	1	1	1	5	1	Valid
113	Intelligent analysis of compensation and benefits	1	0	1	1	1	5	0.8	Modify
114	Personalized incentive measures	1	1	1	1	1	5	1	Valid
115	Scientific policy making	1	0	1	1	1	5	0.8	Modify
116	Fair compensation and benefits system	1	1	1	1	1	5	1	Valid

Evaluation results of IOC for the CIPP Expert Evaluation Form

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Expert					Total	IOC	Result
			1	2	3	4	5			
Context Evaluation	Background and Purpose	Do you agree that the model has a clear background and purpose, and can it fully and truly grasp the reality of university human resource management?	1	1	1	1	1	5	1	Valid
		Do you agree with the role of Personnel Information Management, Personnel Recruitment Management, Personnel Development Management, Performance Assessment Management, Internal Promotion Management, and Compensation and Benefits Management in this model?	1	1	1	1	1	5	1	Valid

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Expert					Total	IOC	Result
			1	2	3	4	5			
	Human resource management body	Do you agree that the design of this model fully considers the roles of the 6 aspects of management in university human resource management?	1	1	1	1	1	5	1	Valid
		Do you agree that this model takes into account the needs and expectations of all stakeholders involved in university human resource management?	1	1	1	1	1	5	1	Valid
Context Evaluation	Human resource management body	Do you agree that this model effectively reflects the roles and participation levels of each subject in university human resource management?	1	1	1	1	1	5	1	Valid
Input Evaluation	Problem Analysis	Do you agree that the problems existing in university human resource management have	1	1	1	1	1	5	1	Valid

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Expert					Total	IOC	Result
			1	2	3	4	5			
		been fully considered?								
		Do you agree that the questions adequately reflect the diverse perspectives of human resource personnel, managers, university administrators, and research experts?	1	1	1	1	1	5	1	Valid
	Analysis of influencing factors	Do you agree that the summarized influencing factors adequately take into account the complexity and diversity of university human resource management?	1	1	1	1	1	5	1	Valid
		Do you agree that decision support system model for human resource management play a key role in improving the quality of university human resource management?	1	1	1	1	1	5	1	Valid

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Expert					Total	IOC	Result
			1	2	3	4	5			
Process Evaluation	Evaluation mechanism	Do you agree that the evaluation mechanism comprehensively covers all key links and important areas?	1	1	1	1	1	5	1	Valid
		Do you agree that the evaluation results of this model can be used to guide management practice and policy formulation?	1	1	1	1	1	5	1	Valid
		Do you agree that the model can adapt to different management styles, needs and technology conditions?	1	1	1	1	1	5	1	Valid
	Feasibility of Model Implementation	Do you agree that this model is highly operable and usable?	1	1	1	1	1	5	1	Valid
		Do you agree with the design of the relationships	1	1	1	1	1	5	1	Valid

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Expert					Total	IOC	Result
			1	2	3	4	5			
		between the various elements in the decision support system model for human resource management?								
Product Evaluation	Model Feedback and Improvement	Do you agree that the feedback mechanism designed in this model is flexible and practical enough?	1	1	1	1	1	5	1	Valid
		Do you agree that the adjustment and improvement design of this model can improve its applicability?	1	1	1	1	1	5	1	Valid
		Do you agree that the results from expert survey questionnaire are highly consistent with the literature review results for Objective 1, increasing confidence in the success of the model?	1	1	1	1	1	5	1	Valid

CIPP Evaluation	Evaluation Indicators	Specific Evaluation Contents	Expert					Total	IOC	Result
			1	2	3	4	5			
		Do you agree that the application of decision support system model for university human resource management can help reduce the probability of problems in university human resource management?	1	1	1	1	1	5	1	Valid
		Do you agree that the application of decision support system model for university human resource management can effectively improve university human resource management effectiveness?	1	1	1	1	1	5	1	Valid

Appendix E
Certificate of English

**BS
RU** BANSOMDEJCHAOPRAYA
RAJABHAT UNIVERSITY

This is to certify that

Ms. Deng Xin

Achieved BSRU English Proficiency Test (BSRU-TEP) level

C1

Given on 22nd August 2021



(Assistant Professor Dr Kulsirin Aphiratvoradej)

Director

Appendix F

The Document for Acceptance Research

Ref. No. 0644.07/0161



Institute of Research and Development
Phranakhon Rajabhat University
Changwattana, Bangkok
Bangkok 10220 THAILAND

October 30th, 2024

Topic: Your Article Accepted

Dear Xin Deng, Sombat Teekasap, Nainapas Injoungjirakit, Prapai Sridama, Wimon Utog and
Dr. Nisara Paethrangsi

Your research/academic article entitled "DECISION SUPPORT SYSTEM MODEL IN HUMAN RESOURCE MANAGEMENT FOR CHINESE UNIVERSITIES IN SICHUAN PROVINCE" for our Phranakhon Rajabhat Research Journal (Humanities and Social Sciences) has been thoroughly checked by our designated Peer Reviewers. The result is: ACCEPTED. The article will be published on our journal, Vol.19 No.2. Month: July-December 2024, ISSN: 2672-9024 (Online).

Thank you for your contribution to our journal.

Sincerely yours,

A handwritten signature in blue ink that reads "I. Anantakul".

(Associate Professor Dr. Anantakul Intarapadung)
Director, Institute of Research and Development
Phranakhon Rajabhat University

Institute of Research and Development
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