

Retraction

Retracted: Application Research of Particle Swarm Algorithm in Bank Human Resource Management

Security and Communication Networks

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] Y. Wu, S. Wang, X. Wang, and Z. Wang, "Application Research of Particle Swarm Algorithm in Bank Human Resource Management," *Security and Communication Networks*, vol. 2022, Article ID 8788894, 14 pages, 2022.

Research Article

Application Research of Particle Swarm Algorithm in Bank Human Resource Management

You Wu ¹, Shengqi Wang,² Xing Wang,¹ and Zheng Wang ¹

¹School of Public Administration, Guangzhou Xinhua University, Guangzhou 13902, China

²China Construction Bank Corporation Zhuhai, School of Business, Guilin University of Electronic Technology, Guilin 10595, China

Correspondence should be addressed to Zheng Wang; wzwjw@xhsysu.edu.cn

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In the era of knowledge economy, human resources as the first resource of enterprises have long become a consensus. However, human resource management in my country is still in its infancy. There are few studies on the relationship between the two, and the research conclusions are inconsistent. There are very few subjects for research. As the core of my country is banking industry, state-owned commercial banks affect the development direction of my country's banking industry, and their human resource management has its own unique features. However, due to my country's special national conditions, state-owned commercial banks have not been fully market-oriented, lacking a certain degree of independence and autonomy, and the impact of administrative intervention has led to human resource management in state-owned commercial banks that have not been developed as they should be. In a series of questions, in today's turbulent global financial environment, state-owned commercial banks need to improve their human resource management to enhance their sustainable competitiveness. Based on combing the research on the relationship between human resource management and corporate performance by domestic and foreign scholars and analyzing the status quo and problems of human resource management of state-owned commercial banks, this paper collects data through questionnaires and analyzes the reliability and validity of the data. Then use empirical analysis methods to study the relationship between human resource management of state-owned commercial banks and corporate performance. The research results show that there is a significant positive correlation between the human resource management practices of state-owned commercial banks and corporate performance, that is, improving the level of human resource management can promote the improvement of corporate performance.

1. Introduction

At the Third Session of the Twelfth National People's Congress, Zhang Jianguo, the governor of China Construction Bank, once said "banks are a disadvantaged group." As soon as this remark came out, many people who did not know it just took it as a joke. In fact, Zhang Jianguo believes that there are huge challenges in the development of the current banking industry: first, depositors demand high returns, and banks raise the interest rate on deposits to absorb deposits, which indirectly raises the financing cost of the whole society; second, lenders criticize banks for not only making loans difficult but also the loans are expensive. From this perspective, banks are a disadvantaged group. In

addition, judging from the current fiercely competitive financial environment, the current situation of the banking industry is said to have both internal and external troubles [1–3]. Internally, financial marketization reform has already begun. As we all know, the core competitive advantage of enterprises lies in talents, especially for the knowledge-intensive banking industry. The opening of the upper limit on deposit interest rates is a "step at the door," and the market-oriented reform of bank interest rates announced as completed. Banks are facing increasing pressure on deposits, and the battle for deposits among banks will inevitably intensify. Foreign troubles should also not be underestimated. Since 2001, China joining the WTO until 2006, the five-year protection period has expired, and the banking industry fully

opened on December 11, 2006 [2, 4–6]. On the one hand, state-owned commercial banks are facing fierce competition from overseas banks; on the other hand, they are facing the encroachment of Internet finance. From the recent two years of Aliped and Yu'eobao to the wave of electronic red envelopes during the Spring Festival Gala this year, Internet companies have set off a new round of financial wars. People cannot help asking, why are emerging Internet companies standing in front of Internet finance. Human resources are the sum of knowledge and skills condensed in employees and have strong background dependencies. The management of human resources is difficult to be imitated or copied by competitors, which is where the enterprise obtains a sustainable competitive advantage. The author believes that because my country's state-owned commercial banks have not been fully market oriented, lacking independence, and autonomy, they cannot sharply capture market information and carry out reforms and innovations in a timely manner [7–10].

In the end, private finance has already shown its footing in the competition with state-owned commercial banks. With the continuous decline of my country's banking market access infrastructure, as of the end of 2014, there were more than 4,000 registered legal entities in the domestic banking industry, and various financial and nonfinancial institutions began to expand related businesses to the banking industry, hoping to win a share in the financial industry soup [11–13]. According to the 2014 Bank of China Annual Report, with the acceleration of interest rate marketization, deposit substitute products have become more abundant, pressure on bank deposits to drain has increased, and deposit growth has declined. With the slowdown of domestic economic growth, the traditional profit model of commercial banks relying solely on asset expansion is changing. Under the more complex and challenging environment of the bank's operating environment, the past "three highs" development model of my country's banking industry (high scale growth, high-performance indicators, and high profit growth) is no longer feasible. It only hoped to rely on widening interest margins [5, 14, 15]. The traditional profit model of increasing credit assets is no longer a long-term solution. In addition, the capital market is increasingly competing for the banking market. The state-owned commercial banks need to improve their own risk management and control capabilities and the ability to respond to market risks for the slowdown of domestic economic growth. To maintain or improve their competitive position, state-owned commercial banks must pay attention to their own human resources. Enterprises should improve their human resource management level. To sum up, it can be seen that the importance of state-owned commercial banks in the financial system is getting lower and lower. State-owned commercial banks are only strong on the outside and are currently facing a huge challenge to survival and development [16–18].

As we all know, the core competitive advantage of enterprises lies in talents, especially for the knowledge-intensive banking industry. Human resources, which is the sum of knowledge and skills condensed in employees, have a strong background dependence and are difficult to be

imitated or plagiarized by competitors, making it a place where companies can obtain sustainable competitive advantages. State-owned: to maintain or improve its competitive position, commercial banks must attach importance to their own human resources and improve their own human resource management level. At present, for most banks, especially state-owned commercial banks, the human resource management of enterprises is still in the traditional personnel management stage, and there are problems such as weak human resource management concepts, backward management levels, and imperfect system construction [19–21]. In the end, talents may appear. Disadvantages that hinder the development of the enterprise are loss, technological disconnection, and overall aging of employees. In the process of market competition, those human resource management models that are out of touch with corporate development strategies, unscientific recruitment and allocation, and imperfect training and incentive mechanisms have been difficult to adapt to the needs of corporate competition and development requirements. Sound development is bound to have a negative impact on corporate organizational performance. Therefore, it is necessary to make further research on the relationship between human resource management of state-owned commercial banks and corporate performance [22–24].

This paper uses People's Republic of China's state-owned commercial banks as sample data to conduct empirical correlation and regression analysis to study the impact of state-owned commercial banks' human resource management practices on corporate performance. Through the research, it is expected to achieve the following goals [22, 25, 26]. First, through the investigation of the human resource management level and corporate performance of our state-owned commercial banks, analyze whether the impact of human resource management practices on corporate performance exists in the state-owned commercial banks. Second, based on the quantitative empirical research results, certain countermeasures and suggestions put forward for the improvement of the human resource management level of state-owned commercial banks. Scholars at home and abroad have done a lot of research on the relationship between human resource management and corporate performance, but Chinese scholars started late in the research on the relationship between the two, the research objects are only individual companies or individual industries, and the research conclusions are also inconsistent. As a result, many companies have insufficient understanding of the relationship between the two and cannot correctly understand the value of human resource management [6, 27, 28]. The research logical structure of this paper is shown in Figure 1.

2. Existing Research Results and Literature Review

By reviewing the development process of human resource management, we can see that human resource management can be divided into three stages in general. First, it is the personnel management stage that focuses on personnel

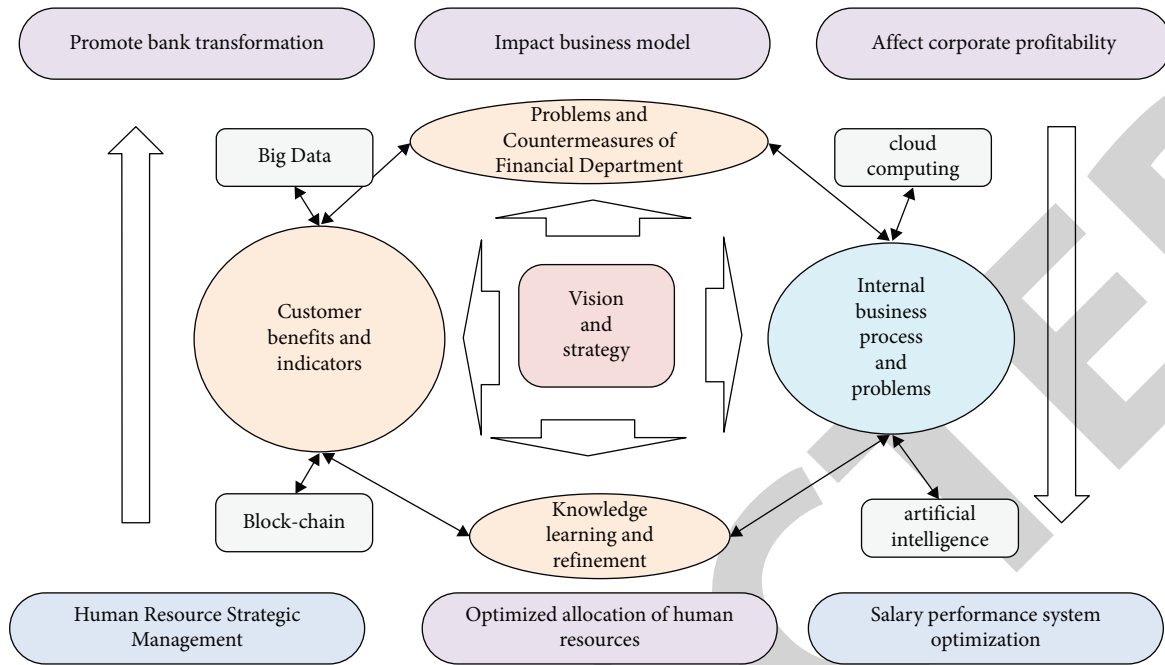


FIGURE 1: The research logical structure of this paper.

work; second, the human resource management stage that focuses on the role of people; and finally, the human resource management raised to the strategic level of strategic human resource management.

2.1. Research on Human Resource Management Theory.

Robert Irving, the famous British utopian socialist in the early 19th century, conducts experiments in the factories it operates. The experiments include methods such as improving working conditions, shortening working days, and increasing wages, in order to explore methods and systems that are beneficial to workers and factories. Therefore, he is called “the father of personnel management.” The stage of scientific management at the end of the 19th century and the beginning of the 20th century is represented by American management scientist Taylor. He began to study how to improve the productivity of individual workers and the overall efficiency of the enterprise. In the current state, for most banks, the human resource management of enterprises is still in the traditional personnel management stage. In particular, the state-owned commercial banks have problems such as weak human resource management concept and backward management level. Taylor’s contribution is that he put forward ideas such as employee work quotas, work process standardization, employees’ ability to adapt to their jobs, and differentiated piecework for salary settlement. At that time, it caused people’s attention and led to the development of human resource management thought [14, 26, 29].

In 1929, the American psychologist and management scientist Mayo conducted a nine-year Hawthorne experiment at the Hawthorne factory of Western Electric Company and began to study the behavior of people in the

organization. He believes that workers are social people rather than economic people, there are informal organizations in enterprises, and production efficiency mainly depends on the working attitude of workers and the relationship with people around them. Subsequently, behavioral sciences developed vigorously in the United States, resulting in a large number of influential behavioral scientists and their theories, including Maslow’s theory of needs, McCree go’s XY theory, Herzberg’s two-factor theory, Rome’s theory, and expectation theory. Model analysis results are shown in Figure 2.

2.2. Corporate Performance Research.

In the 1980s, Milles and others began to conduct systematic research on human resource management. They believed that traditional personnel management was no longer suitable for the needs of modern enterprises and put forward the concept of human resource management. This kind of change is not a simple name change, but a huge change in management philosophy and management methods. Regarding corporate employees as the most important resource for achieving corporate strategic goals, they have flexibility, creativity, and plasticity that other resources do not have and attach importance to the long-term development of employees. Second, they believe that human resource management needs to participate in the formulation and implementation of corporate strategic decisions. The goal of human resource management is not only to provide enterprises with the required human resource products and services but also to improve their operating profits, survival, and development capabilities and reduce labor costs. Increasing the competitiveness of enterprises, etc., also pay more attention to the role of human resources. Regarding the content of human resource management,

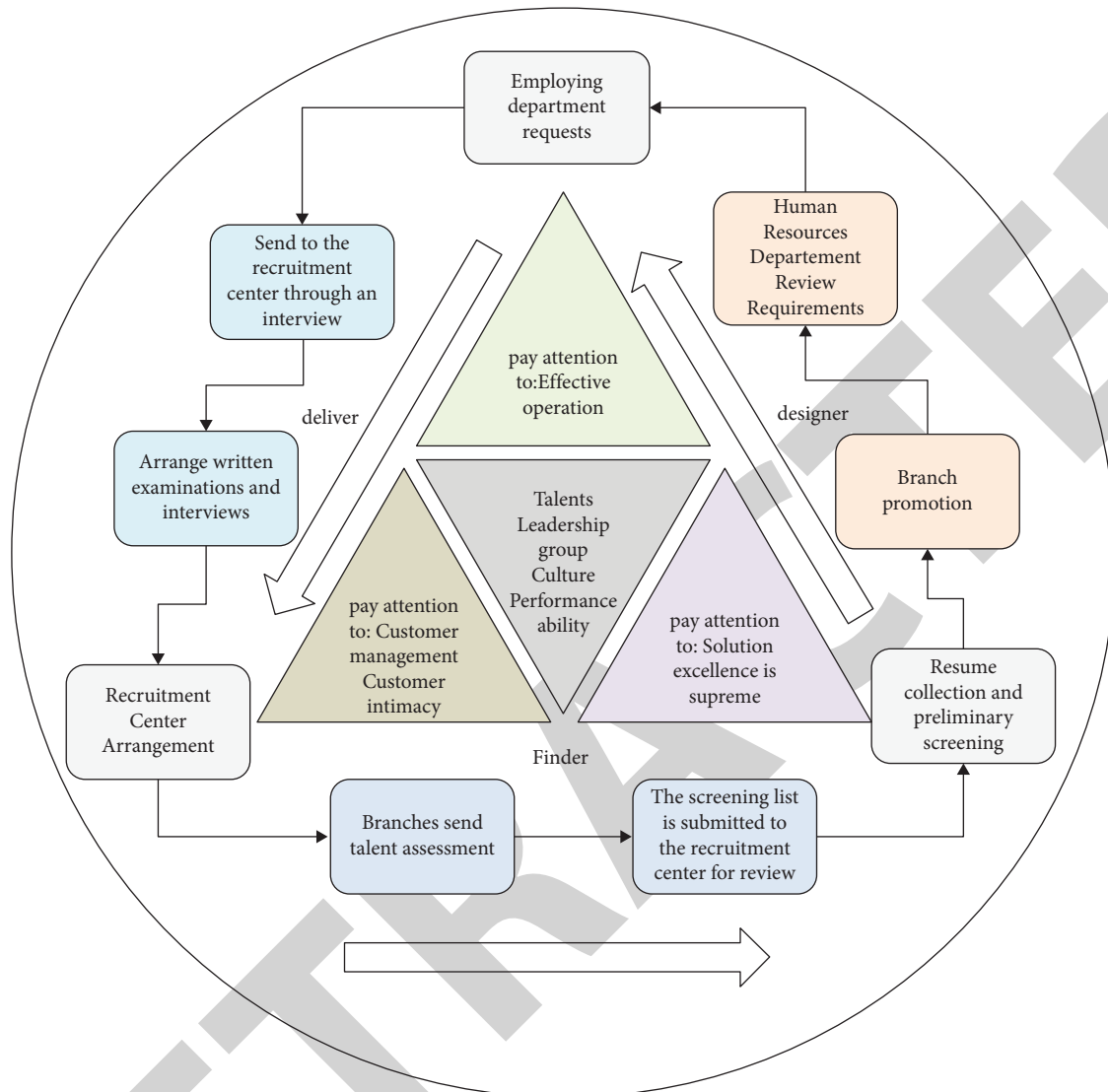


FIGURE 2: The relationship diagram of the influence of financial technology on the human resource management of state-owned enterprise banks.

scholars at home and abroad have different opinions and give their own rationale from different angles [30].

Academia generally divides human resource management into six major modules: (1) human resource planning: refers to forecasting the supply and demand of human resources in the enterprise according to changes in the internal and external environment and conditions of the enterprise. They needs to be balanced to ensure the smooth progress of human resource management practices from the source. The construction of the state-owned banking system is not perfect. These problems are time honored and can lead to brain drain, technological disconnect, and an overall aging workforce. Human resource planning is a decisive plan in enterprise planning, and it has a guiding role in human resource management activities. It is of strategic significance and called the link of human resource management activities. (2) Recruitment and allocation of personnel: whether the recruitment is appropriate not only relates to whether

the work can carried out smoothly but also determines whether the enterprise can develop rapidly. Therefore, it is necessary to choose different recruitment channels and recruitment methods according to the characteristics of the enterprise and the characteristics of the position. In terms of staff allocation, it is necessary to make the best use of their talents and match their positions to adapt their personal ability level to the job requirements. The interrelationships between model elements are shown in Figure 3.

2.3. Research on the Relationship between Human Resource Management and Enterprise Performance. The understanding of corporate performance by domestic and foreign scholars has roughly gone from focusing on results to focusing on process, from financial performance to non-financial performance. This article reviews the connotation of corporate performance from a multidimensional perspective

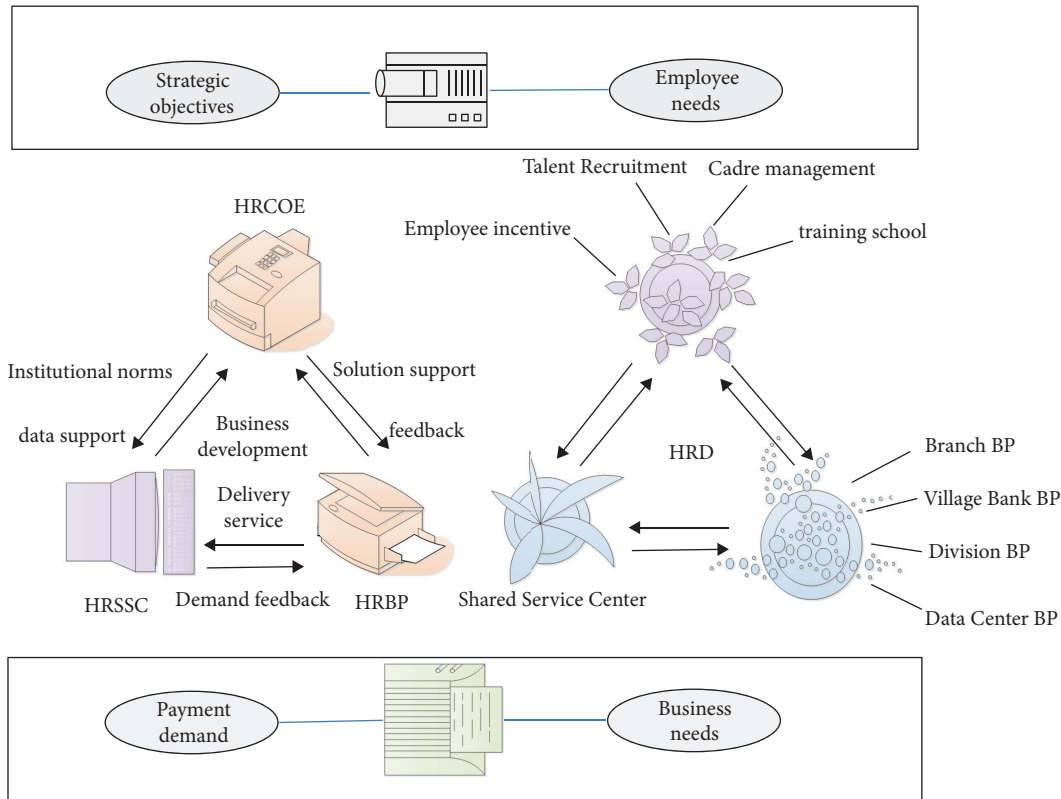


FIGURE 3: Schematic diagram of the ecological allocation of talent resources for postgraduate joint training.

and focuses on companies that take into account both financial performance and nonfinancial performance. The performance measurement methods, which from the perspective of influencing factors, are the survival and development of enterprises in society. It is affected by different internal and external factors, and the results of corporate performance are also affected by various factors. The stakeholder management theory put forward by Ferryman in the book “Strategic Management: The Analysis Method of Stakeholder Management” believes that the development of any enterprise cannot be separated from the input and participation of various stakeholders. The overall interests of all stakeholders: while pursuing good performance, enterprises must also consider the attitudes of internal and external stakeholders. Stakeholders generally include shareholders. Shareholders are investors. Enterprises must first consider maximizing the interests of shareholders. The second is customers. Customers hope to obtain the most cost-effective services and products in the enterprise. The third is corporate employees. Employees hope to get rewards consistent with their efforts in the company. The fourth is the community. They hope that companies can bring development to the local economy while fulfilling corporate social responsibilities and paying attention to protecting the ecological environment.

Corporate performance includes three levels, namely organizational performance, group performance, and individual employee performance. This article is positioned on the organizational performance level. Organizational performance is the overall performance of the organization, which is generally considered by the operating efficiency and

the performance of the operators during a certain operating period of the organization. The level of corporate operating efficiency is mainly manifested in the profitability, asset operation level, debt solvency, and subsequent development capabilities; the performance of the operator is mainly based on the results and achievements of the operator’s operation, growth, and development in the process of operating and managing the enterprise. The contribution made and other aspects are measured. There are many traditional measurement methods of organizational performance, but they mainly focus on financial indicators. This article focuses on the measurement method proposed by Kaplan and Norton in “Balanced Scorecard” in 1992. Therefore, the human resource management reform of state-owned commercial banks: the reform of state-owned enterprises needs to do a good job in human resources planning from the source and provide excellent human resources for the survival and development of enterprises in a timely manner. They believe that in addition to financial indicators, companies must also pay attention to nonfinancial indicators. Financial indicators include four dimensions. The four dimensions influence and promote each other, and the central idea is to realize the company’s vision and mission.

3. Analysis on the Current Situation of Human Resources Management in State-Owned Commercial Banks

Through the above analysis, it seen that there are many problems in the actual operation of the human resource

management of state-owned commercial banks. Through empirical analysis and research, it verified that the six parts of human resource management practice indeed have a significant impact on the corporate performance of state-owned commercial banks. State-owned commercial banks need to improve their own human resource management level to improve corporate performance. This article combines the theoretical knowledge of human resource management to put forward some concrete countermeasures and suggestions for the reform of human resource management of state-owned commercial banks from the perspective of human resource management.

3.1. Improve Recruitment Management and Optimize Personnel Structure. The previous article mentioned that human resource planning has guiding significance for enterprise human resource management activities. Therefore, the human resource management reform of state-owned commercial banks can first do a good job of human resource planning from the source and provide excellent human resources for the survival and development of enterprises in a timely manner. In this research, the ability of human resource planning significantly and positively correlated with corporate performance, which shows that the development of a sound human resource plan can significantly improve corporate performance and gain competitive advantage. Therefore, my country's state-owned commercial banks should integrate human resource planning into their own reform and development strategies and truly establish a "people-oriented" strategic human resource management concept. State-owned commercial banks need to do the following in detail. Model analysis results are shown in Figure 4.

3.1.1. Do a Good Job Analysis. The main task of job analysis is to formulate clear job specifications and work instructions for each position in the company, to help employees quickly master work skills and provide the best direction for employee recruitment. Human resource planning ability has a significant positive correlation with corporate performance. This phenomenon shows that the development of a sound human resource planning can significantly improve the performance of the enterprise and obtain a competitive advantage. Therefore, it is more necessary work instructions and job specifications that meet the characteristics of the job must made for each job. The human resources department can formulate the job description of the job by understanding the job content, job requirements, rights, responsibilities and benefits of each job, and the quality requirements of each job.

3.1.2. Formulate Perfect Staffing Standards. Reasonable labor quota is the scientific standard for enterprise employment, ensuring that enterprises use human resources rationally and economically, and improve labor productivity. The long-standing problems of redundant staff and inbreeding in state-owned commercial banks can establish by setting clear staffing standards to remove noncompliant

employees, reduce labor costs for enterprises, and improve the efficiency of talent utilization. Recruitment is not only an issue of the number of employees but also the quality of human resources. Therefore, state-owned commercial banks must introduce high-quality talents to make the best use of their talents and make them suitable. In addition, with changes in the internal and external environments of enterprises, state-owned commercial banks should make appropriate amendments to the staffing standards that do not meet actual needs. Model analysis results are shown in Figure 5.

3.1.3. Institutionalization of Human Resource Management. The most important thing in human resource planning is to establish and improve various personnel rules. Therefore, my country's state-owned commercial banks should integrate human resource planning into the enterprise's own reform and development strategy. State-owned enterprises should truly establish a "people-oriented" strategic human resource management concept.

The calculation principle of local consistency is relatively simple, mainly using Kendal Concorde coefficient, and the specific calculation formula is as follows:

$$W = \frac{\sum (R_i)^2 - n(\bar{R})^2}{1/12K^2(n^3 - n)}. \quad (1)$$

The calculation formula of single-sample statistics is as follows:

$$t = \frac{\bar{X} - \mu}{\delta_x / \sqrt{n - 1}}. \quad (2)$$

Set two random sequences X and Y , Pearson correlation coefficient between the two sequences is r , then:

$$r = \frac{\text{cov}(X, Y)}{\sqrt{\sigma_x^2} \sqrt{\sigma_y^2}} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}}. \quad (3)$$

In order to ensure the accuracy of the results, this paper uses two evaluation indexes, mean absolute error, and root mean square error, to evaluate the optimization effect of the model. The specific calculation formulas are as follows:

$$\text{MAE} = \frac{1}{s} \sum_{i=1}^s |\hat{y}_i - y_i|, \quad (4)$$

$$\text{RMSE} = \sqrt{\frac{1}{s} \sum_{i=1}^s [\hat{y}_i - y_i]^2}. \quad (5)$$

Coverage index calculates the ratio of predicted items to all unscored items, so as to measure the comprehensiveness of prediction. Assuming that h items are predicted, the calculation method of coverage is as follows:

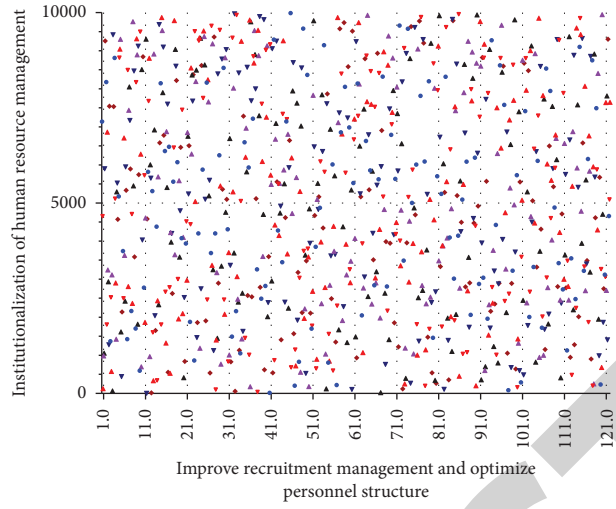


FIGURE 4: The applicability of developing a sound human resource plan.

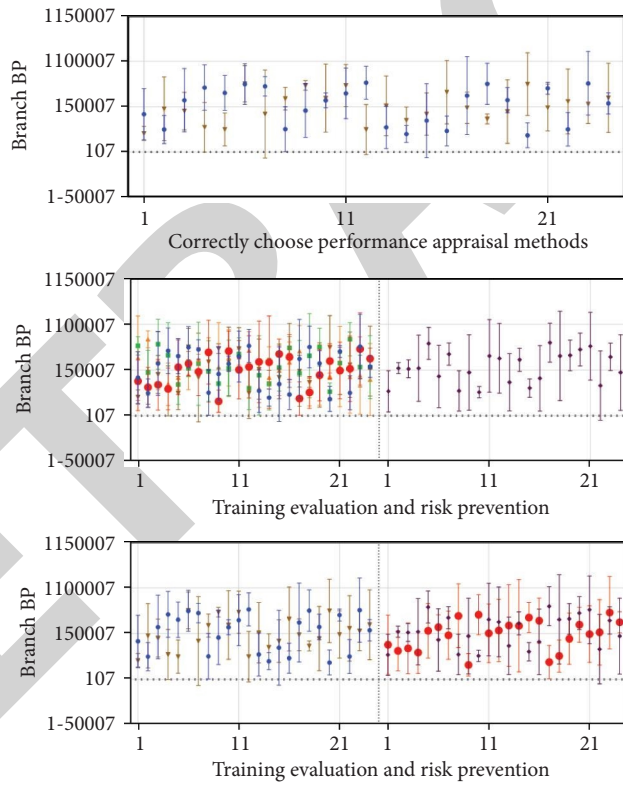


FIGURE 5: Model of improve recruitment management and optimize personnel structure.

$$\text{Cov} = \frac{h}{n} \quad (6)$$

Recall index is also used to evaluate the system effect in the field of information retrieval. The larger the recall value, the better is the recommendation quality of the algorithm.

$$\begin{aligned} \text{recall} &= \frac{\text{Hits}}{|\text{test}|} \\ &= \frac{|\text{test I Top} - N|}{|\text{test}|} \end{aligned} \quad (7)$$

On the one hand, it helps to weaken the long-existing “official standard” idea of my country’s state-owned commercial banks, realize the transparency and democratization of internal management, and alleviate employee conflicts. On the other hand, the process of institutionalization can solicit employees’ opinions and reflect employee awareness. Only by involving employees in formulating systems can make the employees better comply. Model analysis results are shown in Figure 6.

3.2. Clarify the Criteria for Talent Selection and Evaluate the Effectiveness of Recruitment. The role of recruitment management for talents related to the question of whether state-owned commercial banks can improve the quality of human resources. The impact of recruitment management on corporate performance has also confirmed. State-owned commercial banks need to pay attention to the following points in improving recruitment management. The effect of recruitment and selection affects whether the human resource demand of state-owned commercial banks is realized. The level of talent demand of state-owned commercial banks determines that the form of recruiting talents cannot be single. For different talent needs, different forms of recruitment should be adopted. Model analysis results are shown in Figure 7.

3.2.1. Internal Recruitment. When there are vacancies in the company, you can first consider adopting the internal recruitment method to select suitable personnel from the company’s internal personnel to supplement the vacant positions. Because managers have a fuller understanding of internal employees, employees are also more familiar with the job content and can adapt to new jobs more quickly. Therefore, the accuracy of internal recruitment is high. In addition, internal recruitment can provide employees with development opportunities and generate certain incentives. State-owned commercial banks can use the form of internal recruitment to recommend outstanding talents through employee recommendation, and they also publish recruitment information within the company to allow employees to compete for posts and form an enterprising spirit within the company.

In order to alleviate the impact of differences in actual scores between users on user trust relationship [28], the mean value of the scoring difference between the two users on the common scoring items is calculated as follows:

$$\varepsilon = \frac{\sum_{i \in I_a I_b} (|c_{ai} - c_{bi}|)}{|I_a I_b|} \quad (8)$$

The constraint conditions are equations (3)–(5):

$$\begin{aligned} f(x_i, \omega) - y_i &\leq \xi_i + \square, \quad i = 1, 2, \dots, l, \\ \xi_i \xi_j &\geq 0, \quad i = 1, 2, \dots, l. \end{aligned} \quad (9)$$

Shape the general functional relationship between the output y of the injury model and the input x_1, x_2, \dots, x_n . The Kolmogorov–Gabor polynomial is as follows:

$$\begin{aligned} y &= f(x_1, x_2) \\ &= a_0 + a_1 x_1 + a_2 x_2 + a_3 x_1^2 + a_4 x_2^2 + a_5 x_1 x_2. \end{aligned} \quad (10)$$

And treating each of the monomials as m input models in the original structure of the modeling network:

$$\begin{aligned} v_1 &= a_0, \\ v_2 &= a_1 x_1, \\ v_3 &= a_2 x_2, \dots, \\ v_6 &= a_5 x_1 x_2. \end{aligned} \quad (11)$$

The final information $i_t \times C_t'$ is expressed as the value that can be obtained C_t from the output information of the joint forgetting gate:

$$C_t = f_t * C_{t-1} + i_t * C_t' \quad (12)$$

3.2.2. External Recruitment. Compared with internal recruitment, externally recruited talents can bring new ideas and new methods of management to the company, and produce a “surplus fish effect” to stimulate employees’ morale. The main ways of external recruitment is to publish advertisements. The other is to use intermediaries to recruit the required senior and cutting-edge talents through headhunting companies. The main task of job analysis is to formulate clear job specifications and job descriptions for each job in the enterprise. The analysis results are helpful for employees to quickly master work skills and also provide the best direction for employee recruitment. The third is commonly used campus recruitment, and the fourth is online recruitment. The cost is low, and it not restricted by time and place. The fifth is to recommend talents through acquaintances, with a certain degree of reliability. Model analysis results are shown in Figure 8.

Both internal and external recruitment methods have their own advantages and disadvantages. State-owned commercial banks should choose suitable recruitment methods in accordance with the requirements of the vacant positions for talents. Although campus recruitment can reshape talents that meet the characteristics of the enterprise, college students often have the problem of being superior and inferior, inaccurate in positioning themselves, and confused about the future development, and it is difficult to determine their suitable jobs and positions. With regard to psychological expectations, there may be a higher turnover rate. Therefore, the state-owned

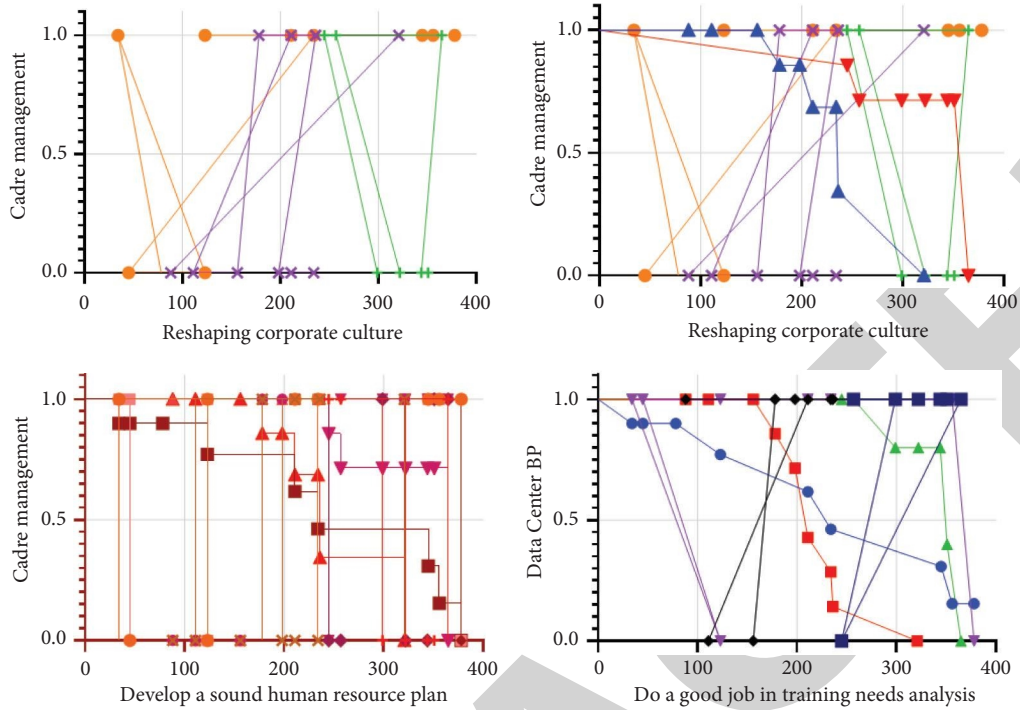


FIGURE 6: New public management theory in choosing the right recruitment method.

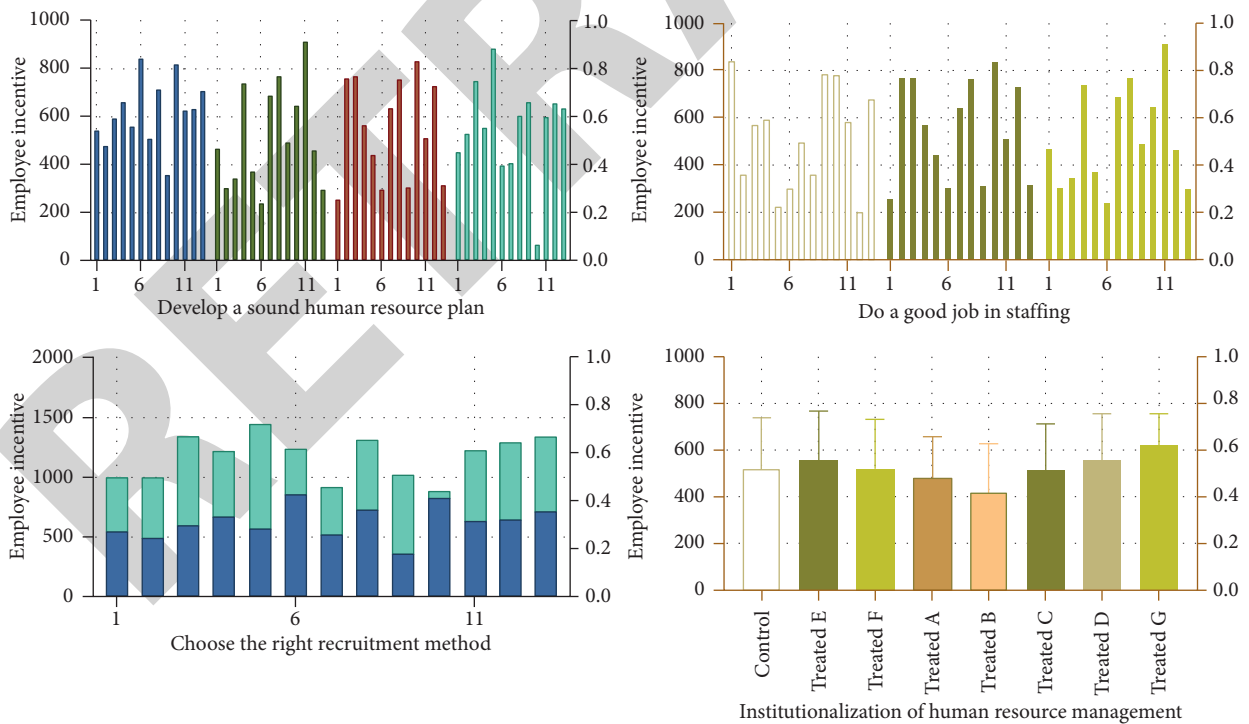


FIGURE 7: System analysis results after employee training.

commercial banks should pay more attention to their talents with the positions It also helps them determine the suitable positions. State-owned commercial banks should

choose suitable recruitment methods in accordance with the requirements of the vacant positions for identifying talents. Model analysis results are shown in Figure 9.

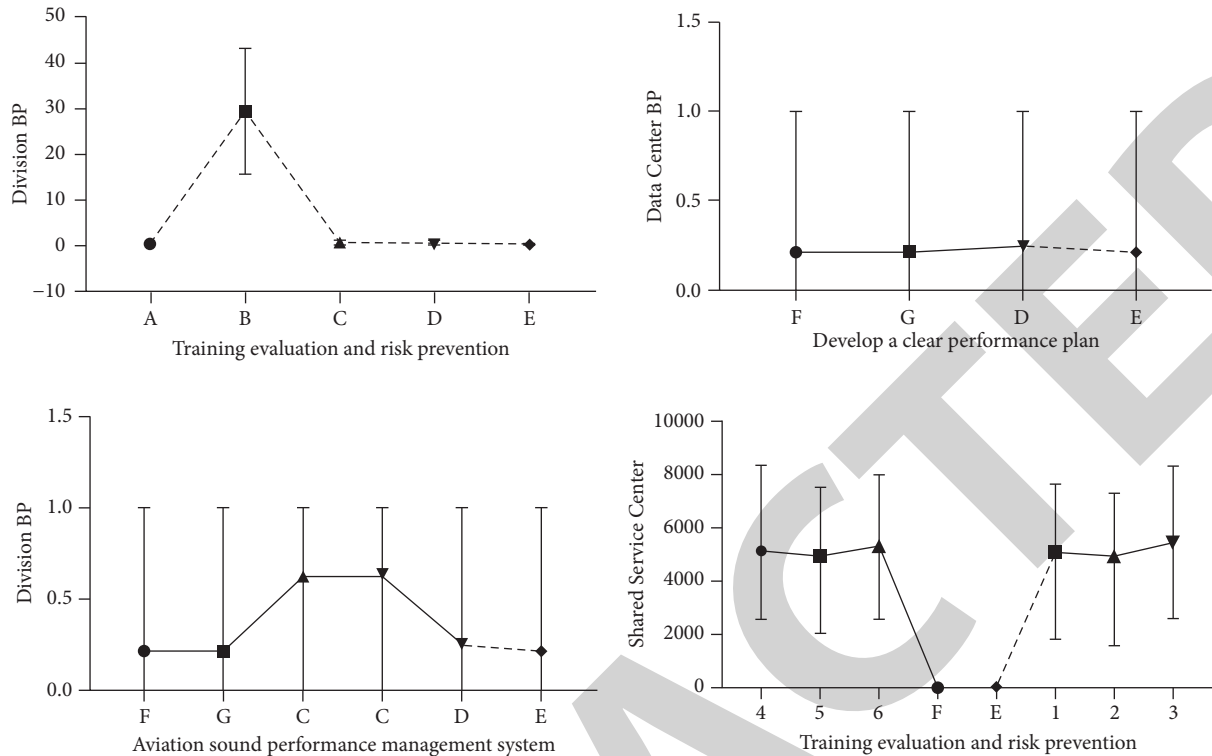


FIGURE 8: Training evaluation and risk prevention and choice of training method.

3.3. Aviation Sound Performance Management System

3.3.1. Clarify the Criteria for Talent Selection and do a Good Job Evaluation on Recruitment Effect. State-owned commercial banks can only find talents that meet the job requirements more quickly and accurately after clarifying the criteria for talent selection. The talent selection criteria should clearly state in the job analysis, that is, there must be clear employee appointment standards, including the requirements for the employees' academic qualifications, skills, and physical health. After the recruitment is completed, the effect of each recruitment should be evaluated, the success or failure of this recruitment should be summarized as a reference for future recruitment work, and lessons should be learned to prevent the same mistakes in the next recruitment work. In addition, the recruitment assessment can analyze whether the talents needed recruited and what kind of recruitment needs in the next step. Model analysis results are shown in Figure 10.

3.3.2. Make a Good Job in Staffing. Scientific staffing should select suitable positions according to the characteristics of employees. However, in practice, companies often ignore the characteristics of employees and only arrange personnel work according to the needs of the company, and there is a phenomenon of mismatch between personnel and posts. In the staffing of state-owned commercial banks, new hires can rotate first, so that each new hire can work in each position for a period, so that employees can find out which position they are more suitable. Training and inspections help

employees choose positions that are more suitable for their development. The internship period of new personnel can adopt the traditional form of masters and apprentices. On the one hand, it is helpful for new personnel to integrate into the interpersonal relationship of the enterprise more quickly; on the other hand, it allows employees to adapt to work requirements and master work skills more quickly. Model analysis results are shown in Figure 11.

The diversity of training needs of state-owned commercial banks determines the importance of training needs analysis. If there is no training needs analysis, it will only make the training work in a headless state. When employees' knowledge and skills cannot meet the development needs of the company, individual employees may not take the initiative to ask the company to provide training. At this time, the company needs to analyze the training needs of internal employees like what type of training is required and which employees needed training. Carrying out training, trainer selection, training materials, training time and location, and other information are needed to develop a complete training plan.

State-owned commercial banks have many jobs, and each job has multiple levels. Therefore, it is more necessary to make job descriptions and job specifications conform to the job characteristics for each position. Reasonable labor quota is the scientific standard for enterprise employment. Enterprises should ensure rational and economical use of human resources and improve labor productivity. To recognize the importance of human resources and human resource management, we find a human resource management model that suits its own characteristics as soon as

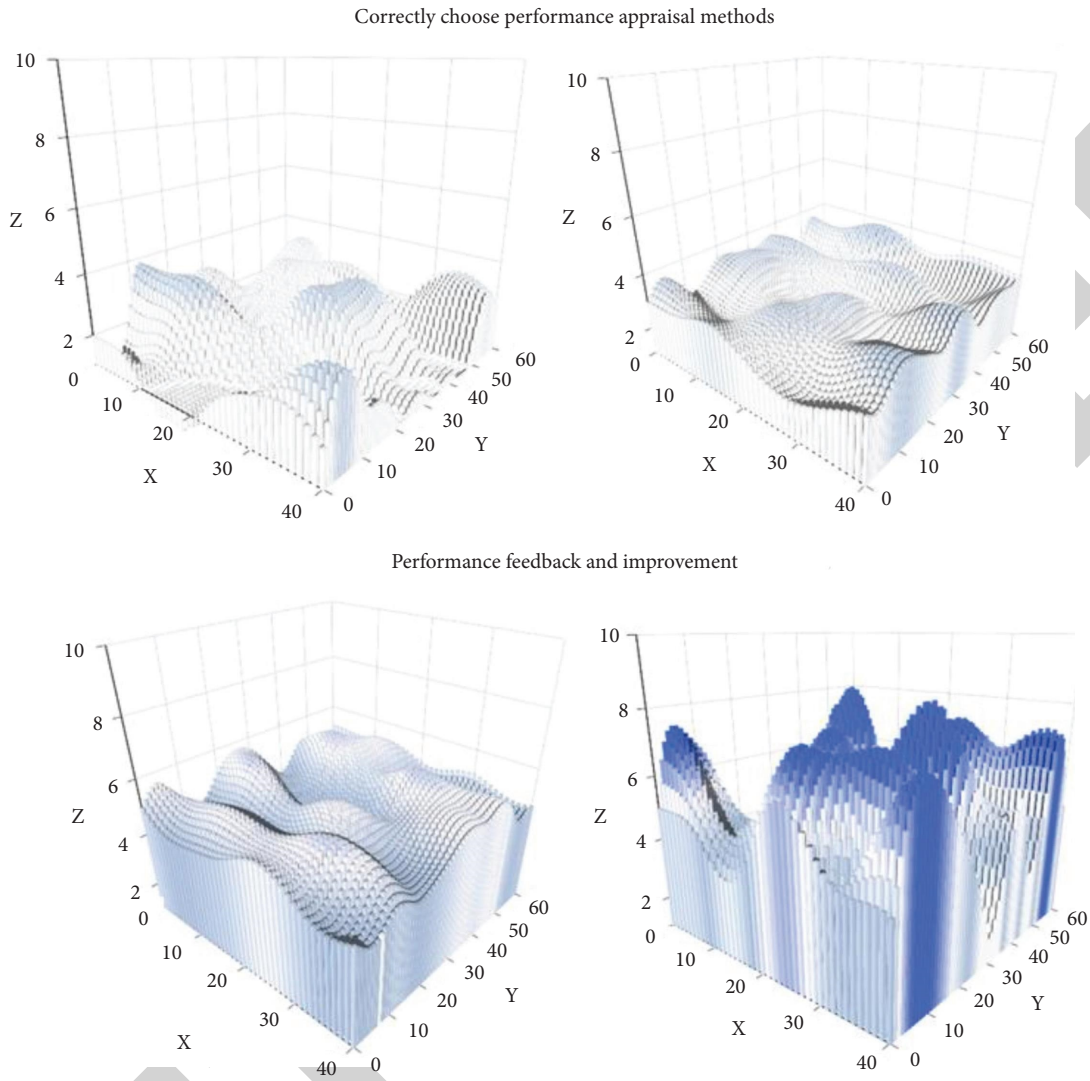


FIGURE 9: Correctly choose performance appraisal methods and performance feedback and improvement.

possible and improve the level of human resource management to improve its competitive advantage toward domestic and foreign peers. It provides more dimensional thinking for the research of human resource management in our country. Although the existing literature has a lot of research on the relationship between human resource management and corporate performance, there is also a lot of research on the human resource management of state-owned commercial banks. However, no scholar has

combined the two to study the impact of state-owned commercial banks' human resource management on corporate performance. By verifying the relationship between human resource management of state-owned commercial banks and corporate performance, this paper believes that there is a significant positive correlation between the two and analyzes the degree of influence of different human resource management functions on corporate performance.

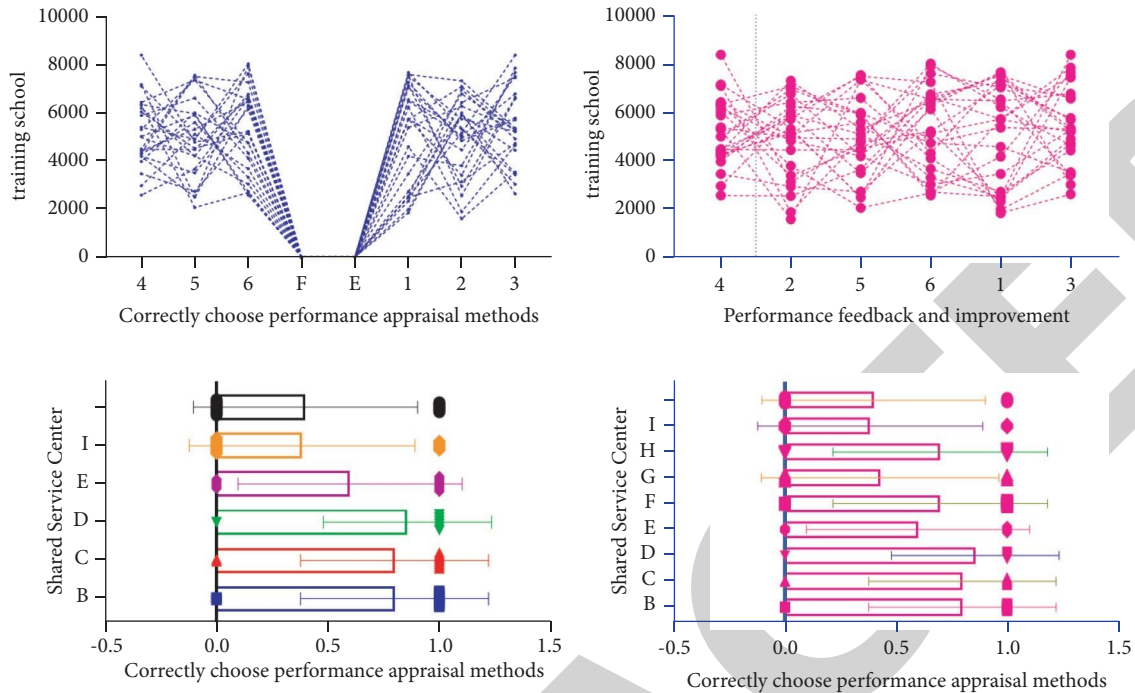


FIGURE 10: The improvement of salary management system and reshaping corporate culture.

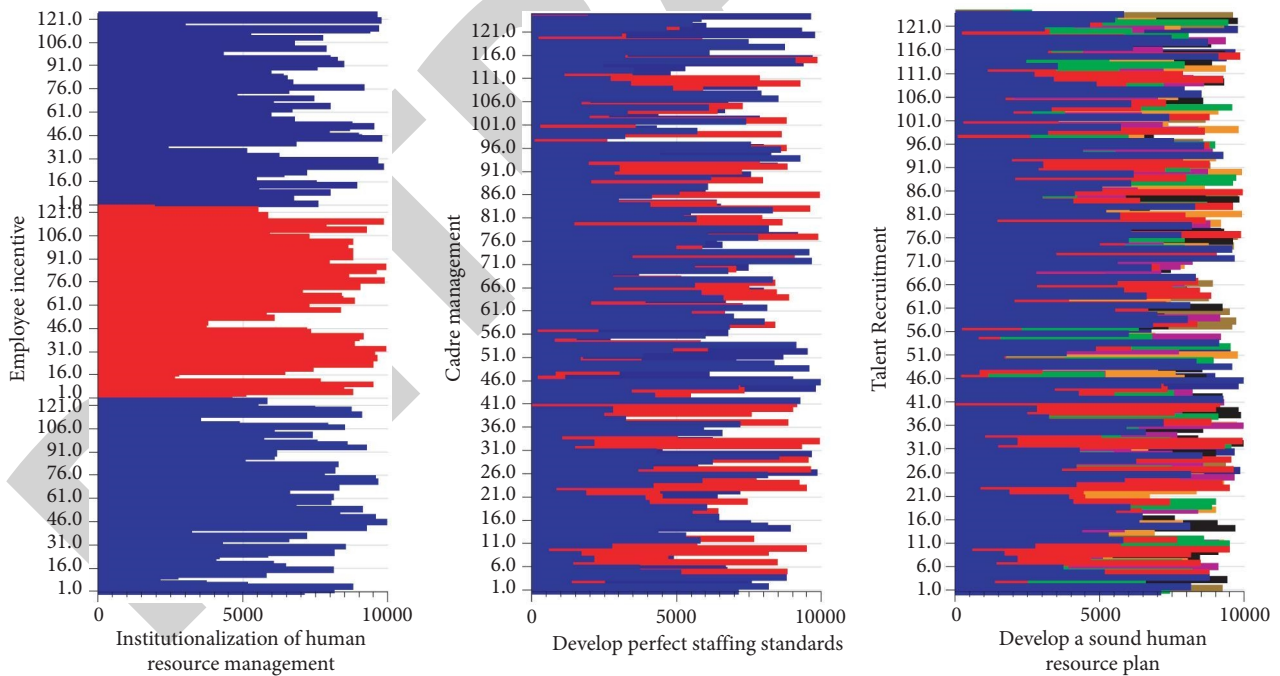


FIGURE 11: Institutionalization of human resource management and perfect staffing standards.

4. Conclusion

So far, empirical studies on human resource management practices and corporate performance by domestic and foreign scholars have roughly shown two different conclusions: most scholars believe that human resource management practices have a positive correlation with corporate

performance, but the conclusions of the research are not completely consistent. Most studies only prove that some human resource management practices have a significant correlation with corporate performance. This article divides the practice of human resource management into six modules functionally and separately studies the impact of the six modules on corporate performance. Another group

of scholars believe that the impact of human resource management practices on corporate performance is not significant, or even believe that there is no positive or negative correlation between the two. The long-standing problems of overstaffing and inbreeding in state-owned commercial banks are overcome by establishing clear staffing standards and release employees who do not meet the standards, reducing the labor cost of the enterprise and improving the efficiency of talent utilization. The most important work of human resource planning is to establish and improve various personnel rules and regulations within the enterprise. Standardized systems can improve employee productivity and help enterprises to operate in an orderly manner. State-owned commercial banks need to better institutionalize the management and control of a large number of employees. The diversification of the intermediary mechanism shows that human resource management practices can affect corporate performance through a variety of factors and indirectly proves that there is a relationship between the two situations.

- (1) As for which intermediary impact of the mechanism is more effective, and the company needs to consider it according to its own organizational structure and human resource characteristics. Different corporate characteristics, different corporate cultures, and even different regional cultures will affect the role of the intermediary mechanism. In summary, the research on the relationship between human resource management practices and corporate performance in the Chinese context is significantly different from Western empirical research conclusions. The empirical research conclusions of different domestic scholars are also very different, and the research objects are diverse. It is systematic and has little reference for the human resource management practices of domestic enterprises. It needs further research and discussion by scholars.
- (2) Selection of training methods. The level of employee training of state-owned commercial banks determines the diversity of training methods. Staff training methods mainly include direct teaching, including lectures to teach theoretical knowledge, work guidance to employees, or job rotation to improve their work skills from practical operations. It can also take the form of brainstorming or outreach training to improve the comprehensive ability of employees. State-owned commercial banks should choose the appropriate method according to each training target and training purpose. For example, classroom-teaching methods should be adopted to introduce the basic situation of the company to new employees of the company, and the work rotation method and work guidance method should be adopted to allow employees to quickly master the skills required for their work. For high-level personnel or when a new problem needs solved, collective brainstorming can be used to brainstorm ideas.

- (3) Training evaluation and risk prevention. Training evaluation is a necessary process to measure whether the training is effective after the training is over, to prevent the training from becoming a formality. They still regard the human resources department as a logistics support department of the enterprise organization and believe that the investment in human capital will only increase the labor of the enterprise. It is useful to make the right cost value for the enterprise. Even if individual corporate managers know that human resource management can have an impact on corporate performance, how human resource management affects corporate performance has become a “black box.” In this context, whether the practice of human resource management will have an impact on corporate performance, how much impact it has and how this impact achieved, has become a common concern for theoretical and practical operators. Through the empirical research on the human resource management practice and corporate performance of state-owned commercial banks, the relationship between the two can further verified theoretically, and the domestic research on the relationship between the two can enriched. This article analyzes the problems of human resource management in our state-owned commercial banks and verifies the relationship between human resource management practices and corporate performance. The research shows that there is a significant positive correlation between the two. Therefore, to a certain extent, it can cause state-owned commercial banks to reflect on their own corporate human resource management practices and recognize.

Data Availability

The labeled data set used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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References

- [1] Z. Khan and S. Amin, “Bottleneck model with heterogeneous information,” *Transportation Research Part B: Methodological*, vol. 112, no. 1, pp. 157–190, 2018.
- [2] J. M. Cairney, K. Rajan, and D. Haley, “Mining information from atom probe data,” *Ultramicroscopy*, vol. 159, no. 1, pp. 324–337, 2020.

- [3] M. D. Moreno, "Translation quality gained through the implementation of the iso en 17100:2015 and the usage of the blockchain," *Babel*, vol. 1, no. 2, pp. 1–9, 2020.
- [4] J. E. Varajao, "A new process for success management-bringing order to a typically ad-hoc area," *Mod. Proj. Manag.*, vol. 5, no. 3, pp. 94–99, 2018.
- [5] K. Alexiou and J. Wiggins, "Measuring individual legitimacy perceptions: scale development and validation," *Strategic Organization*, vol. 17, no. 4, pp. 470–496, 2019.
- [6] Z. Wang, H. Ren, Q. Shen, W. Sui, and X. Zhang, "Seismic performance evaluation of a steel tubular bridge pier in a five-span continuous girder bridge system," *Structures*, vol. 31, no. 1, pp. 909–920, 2021.
- [7] S.-M. Hosseininassab, S.-N. Shetab-Boushehri, S. R. Hejazi, and H. Karimi, "A multi-objective integrated model for selecting, scheduling, and budgeting road construction projects," *European Journal of Operational Research*, vol. 271, no. 1, pp. 262–277, 2018.
- [8] M. Guo and N. Arunkumar, "Construction of employee training program evaluation system of three exponential forecast based on sliding window," *Cluster Computing*, vol. 22, no. 3, pp. 6865–6870, 2019.
- [9] F. Sadile, A. Bernasconi, F. Carbone, F. Lintz, and G. Mansueto, "Histological fibrosis may predict the failure of core decompression in the treatment of osteonecrosis of the femoral head," *International Journal of Surgery*, vol. 44, pp. 303–308, 2017.
- [10] X. Wang, X. Yu, L. Guo, F. Liu, and L. Xu, "Student performance prediction with short-term sequential campus behaviors," *Information*, vol. 11, no. 4, p. 101, 2020.
- [11] E. M. A. Ahmed, "A hydrologic-economic-agronomic model with regard to salinity for an over-exploited coastal aquifer," *Journal of Geosciences*, vol. 12, no. 12, pp. 1–12, 2019.
- [12] L. Ye and T. Yamamoto, "Modeling connected and autonomous vehicles in heterogeneous traffic flow," *Physica A: Statistical Mechanics and Its Applications*, vol. 490, no. 40, pp. 78–81, 2018.
- [13] H. B. Gao and X. Y. Zhang, "Longitudinal control for mengshi autonomous vehicle via cloud model," *IOP Conference Series: Materials Science and Engineering*, vol. 320, no. 1, pp. 324–340, 2018.
- [14] H. Chen, Y. Chen, and L. Yang, "Intelligent early structural health prognosis with nonlinear system identification for RFID signal analysis," *Computer Communications*, vol. 157, pp. 150–161, 2020.
- [15] A. Edrees, H. Abdelhamed, S. W. Nho et al., "Construction and evaluation of type III secretion system mutants of the catfish pathogen *Edwardsiella piscicida*," *Journal of Fish Diseases*, vol. 41, no. 5, pp. 805–816, 2018.
- [16] G. Han and W. Fu, "The lateral tracking control for the intelligent vehicle based on adaptive PID neural network," *Sensors*, vol. 17, no. 6, pp. 25–33, 2017.
- [17] C. M. Kang, S.-H. Lee, and C. C. Chung, "Multirate lane-keeping system with kinematic vehicle model," *IEEE Transactions on Vehicular Technology*, vol. 67, no. 10, pp. 9211–9222, 2018.
- [18] J. Barrera-Martinez, M. López-Fernández, and P. M. Romero-Fernández, "The link between socially responsible human resource management and intellectual capital," *Corporate Social Responsibility and Environmental Management*, vol. 26, no. 1, pp. 71–81, 2019.
- [19] T. Fischer and C. Krauss, "Deep learning with long short-term memory networks for financial market predictions," *European Journal of Operational Research*, vol. 270, no. 2, pp. 654–669, 2018.
- [20] M. J. Mokarram, T. Niknam, J. Aghaei, M. Shafie-khah, and J. P. S. Catalao, "Hybrid optimization algorithm to solve the nonconvex multiarea economic dispatch problem," *IEEE Systems Journal*, vol. 13, no. 3, pp. 3400–3409, 2019.
- [21] H. Aguinis, Y. H. Ji, and H. Joo, "Gender productivity gap among star performers in STEM and other scientific fields," *Journal of Applied Psychology*, vol. 103, no. 12, pp. 1283–1306, 2018.
- [22] X. Li, Y. Wang, Q.-H. Wang, Y. Liu, and X. Zhou, "Modified integral imaging reconstruction and encryption using an improved SR reconstruction algorithm," *Optics and Lasers in Engineering*, vol. 112, no. 6, pp. 162–169, 2019.
- [23] S. Schnelle, J. Wang, R. Jagacinski, and H.-j. Su, "A feed-forward and feedback integrated lateral and longitudinal driver model for personalized advanced driver assistance systems," *Mechatronics*, vol. 50, pp. 177–188, 2018.
- [24] S. Banerjee and S. Venaik, "The effect of corporate political activity on MNC subsidiary legitimacy: an institutional perspective," *Management International Review*, vol. 58, no. 5, pp. 813–844, 2018.
- [25] M. Yun, J. Zhao, J. Zhao, X. Weng, and X. Yang, "Impact of in-vehicle navigation information on lane-change behavior in urban expressway diverge segments," *Accident Analysis & Prevention*, vol. 106, no. 1, pp. 53–66, 2017.
- [26] S. Kumar Dwivedi, R. Amin, and V. Satyanarayana, "Blockchain-based secured event-information sharing protocol in internet of vehicles for smart cities," *Computers & Electrical Engineering*, vol. 86, no. 1, pp. 1–9, 2020.
- [27] H. Shao, W. H. K. Lam, and M. L. Tam, "A reliability-based stochastic traffic assignment model for network with multiple user classes under uncertainty in demand," *Networks and Spatial Economics*, vol. 6, no. 3, pp. 173–204, 2019.
- [28] A. Chen, J. Kim, S. Lee, and Y. Kim, "Stochastic multi-objective models for network design problem," *Expert Systems with Applications*, vol. 37, no. 2, pp. 1608–1619, 2020.
- [29] Z. Yang and L. S. C. Pun-Cheng, "Vehicle detection in intelligent transportation systems and its applications under varying environments: a review," *Image and Vision Computing*, vol. 69, pp. 143–154, 2018.
- [30] P. Alessio, C. Peter, and H. Robert, "Prolonging the lifetime of old steel and steel-concrete bridges: assessment procedures and retrofitting interventions," *Structural Engineering International*, vol. 29, no. 4, pp. 507–518, 2019.