

The Impact of Artificial Intelligence on Human Resource Management and Its Development Trends: From the Perspectives of Employees and Enterprises

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Abstract. With the rapid development of artificial intelligence (AI) technology, its application in the field of human resource management has become increasingly widespread, exerting far-reaching impacts on both employees and enterprises. This article aims to conduct a more detailed analysis of the impacts through methods such as case studies and data analysis. It also strives to assist enterprises and employees in correctly understanding the advantages and disadvantages brought about by AI.

Keywords: Artificial Intelligence; Human Resource Management; Structural Optimization

1. Introduction

1.1 Research Background

In recent years, with the rapid development of technology, artificial intelligence (AI) has been penetrating various industries at an unprecedented pace, and the field of human resource management (HRM) is no exception[1]. This technological innovation has not only profoundly changed the traditional mode of HRM but also brought new opportunities and challenges to both employees and enterprises. The following is the research background on the impact of AI on HRM and its development trends, explored from the perspectives of employees and enterprises.

1.2 Research Significance

1.2.1 Practical Significance

This paper is dedicated to studying the relevant impacts of AI on HRM, summarizing the conveniences and crises that AI provides and brings to employees engaged in the human resource industry, offering assistance to those currently working in related fields.

Simultaneously, this paper also aims to study the advantages that using AI to assist in HRM will bring to related enterprises and analyze them, ultimately helping enterprises improve work efficiency and optimize their structures.

1.2.2 Theoretical Significance

By reviewing relevant literature, it is found that current research lacks sufficient exploration of the help and crises that AI brings to personnel in the HRM industry and related fields, as well as data support for performance management and compensation management-related sectors. Moreover, case analysis methods are rarely used in current articles. This paper can address these shortcomings.

1.3 Research Objectives

The purpose of this study is to comprehensively and deeply analyze how AI exerts a broad and profound impact on HRM and predict its future development trends, providing valuable reference and guidance for enterprises and practitioners.

1.4 Research Hypotheses

- (1) The refinement and development of artificial intelligence have significant effects on corporate structural optimization and efficiency.
- (2) The development of artificial intelligence poses relative impacts on individuals engaged in human resource-related industries.

2. Literature Review

2.1 Research Status

With the rapid development of artificial intelligence (AI) technology, its application in the field of human resource management (HRM) has become increasingly widespread, bringing unprecedented opportunities and challenges to enterprises[2]. Based on six relevant literature sources, this section summarizes the innovative

development strategies, impacts and challenges, theoretical research and practical applications of HRM in the era of AI, as well as the opportunities faced and corresponding strategies.

2.1.1 Innovative Development Strategies for HRM in the Era of AI

In "Research on Innovative Development Strategies for Human Resource Management in the Era of Artificial Intelligence," Sun Gangjian (2024) emphasizes the importance of HRM in the enterprise management system and points out that in the era of AI, enterprises need to accelerate the establishment of a modern, intelligent, and refined HRM model. Addressing issues such as outdated models, lagging ideas, lack of data analysis, and outdated performance evaluation methods in current HRM, he proposes countermeasures such as deepening the application of information technology, forming professional management teams, utilizing big data to construct a performance evaluation system, and building a refined salary incentive management system, aiming to improve the efficiency and quality of HRM[3].

2.1.2 The Impact and Challenges of New-Generation Artificial Intelligence on Organization and Human Resource Management

In "The Impact and Challenges of New-Generation Artificial Intelligence on Organization and Human Resource Management," Peng Jianfeng (2023) discusses the influence of new-generation artificial intelligence, represented by ChatGPT, on organization and human resource management. He points out that artificial intelligence and digital intelligent agents will become important assets and production factors for organizations, promoting the formation of a new intelligent soul partnership between enterprises and intelligent agents. At the same time, he also analyzes the impact of artificial intelligence on organizational resources, human-machine-object relationships, organizational forms, and organizational mechanisms, providing insights for organizations to embrace digital and intelligent transformation.

2.1.3 Human Resource Management Driven by Artificial Intelligence Technology: Theoretical Research and Practical Application

Zhang Qi et al. (2023) present "Human Resource Management Driven by Artificial Intelligence Technology: Theoretical Research and Practical Application," which reviews relevant literature on AI technology and human resource

management, elucidating the theoretical foundation and practical applications of AI technology in the field of human resource management. They point out that AI technology can improve the efficiency of human resource management and provide targeted services based on unbiased evaluations, but there are also issues such as a lack of employee security and changes in labor relations. Future research needs to further consolidate the theoretical foundation, optimize application technologies, and refine application strategies[4].

2.1.4 AI-Driven Transformation in Organization and Human Resource Management: Practical Insights and Research Directions

Luo Wenhao et al. (2022) propose an overall framework for research topics on AI-driven transformation in organization and human resource management in "AI-Driven Transformation in Organization and Human Resource Management: Practical Insights and Research Directions." They present current research topics from five perspectives: industry, organization, individual, algorithm, and ethics and law[5]. They emphasize that future research should focus on the "real problems" arising from the integration of artificial intelligence and human resource management, adopt interdisciplinary research methods, and conduct systematic research to develop smart human resource management strategies and theoretical innovations suitable for the Chinese context.

2.1.5 Application Research of Big Data and Artificial Intelligence in Enterprise Human Resource Management

In his dissertation, Wang Yiqian (2020) delves into the application of big data and artificial intelligence in enterprise human resource management[6]. Using empirical analysis and a combination of qualitative and quantitative methods, he takes Company G as a case study to explore the specific applications and optimization strategies of big data and artificial intelligence in human resource management. This research provides practical guidance for enterprises to address human resource management issues in the era of big data.

2.1.6 Opportunities and Challenges Facing Human Resource Management in the Age of Artificial Intelligence

Fang Xin and Liu Xin (2019) comprehensively analyze the dual impact of artificial intelligence (AI) on human resource management in their paper titled "On the Opportunities and

Challenges Facing Human Resource Management in the Age of Artificial Intelligence." They believe that AI not only enhances the efficiency of human resource work, accurately identifies the talents needed by enterprises, and promotes the transformation of enterprise management models, but also poses challenges such as the elimination of low-end jobs, increased employment thresholds, and intensified enterprise polarization. Enterprises need to upgrade traditional management models with new ideas and methods to seize opportunities and promote strategic human resource management.

2.2 Conclusion

In summary, the application of AI technology in human resource management has demonstrated tremendous potential and value. However, while enjoying the convenience brought by technology, enterprises must also pay attention to the challenges and issues it entails. In the future, enterprises should actively address these challenges, deepen the application of information technology, and build an intelligent and refined human resource management model to promote sustainable development and innovation. During the literature review, it was also found that the current research employs case analysis methods relatively infrequently. This paper can make up for some of these deficiencies and assist subsequent research.

3. Case Analysis Method

3.1 Research Approach

The case analysis method is used to verify that the improvement and development of AI have significant effects on corporate structural optimization and efficiency.

3.2 Case Analysis - IBM and Watson AI Platform

Based on an article in Harvard Business Review, this paper conducts a case analysis of IBM's Watson project. IBM launched the Watson Data Platform, leveraging big data, advanced analytics, machine learning, and all related technologies to benefit employees, not just those professionals who have spent years studying basic mathematics and statistical systems in universities. This initiative has great potential for improving efficiency and driving transformation.

Rob Thomas, IBM's Vice President of Analytics Products and Development, stated: "Watson Data Platform is the first enterprise-level data platform built from the ground up to support machine learning. Data is automatically cataloged and organized, ready for the application of AI and machine learning. It meets the needs of everyone, whether you're a business analyst, data engineer, application developer, or data scientist - it's designed to enable all professionals to fully leverage the power of AI." Through analysis of the Watson Data Platform, it is concluded that AI can place employees in a collaborative environment, enhancing overall work efficiency. Additionally, the AI platform can conduct labeled analysis of personnel capabilities and automatically match them with business needs, successfully pairing employees with suitable positions, thereby achieving digitalized person-job matching. This significantly reduces the company's trial-and-error costs and places employees in suitable positions in the shortest time. More importantly, companies in industries such as insurance can use the Watson Data Platform to conduct real-time assessments based on each policy and external factor - all this data is input into the model in real-time. By replacing employees with AI, it optimizes the employee structure, reduces costs, and improves service accuracy.

Furthermore, besides the Watson Data Platform, IBM also leverages AI in the recruitment field. IBM found that LinkedIn provides the highest quality candidates among all recruitment channels, with a conversion rate from interview invitation to hire of 23%, compared to an average of 15% for other channels. Upon learning this data, IBM decided to increase its recruitment advertising spend on LinkedIn. This action significantly reduced recruitment costs and improved accuracy.

3.3 Case Analysis - AI Enhances Employee Satisfaction and Thus Job Motivation

Taking Google as an example, they fully utilize AI for in-depth analysis of employees' career interests. According to an internal report at Google, AI helped identify that 32% of employees in the research and development department showed a strong interest in AI technology. Based on this data insight, Google promptly responded by setting up special training courses in AI technology for these

employees. This initiative not only significantly improved the team's overall technical level but also increased employee satisfaction by 12%. Alibaba utilized AI technology to organize an online corporate culture seminar, attracting over 10,000 employees to participate. During the seminar, employees proposed over 2,000 suggestions, of which 150 were adopted and incorporated into practical actions for corporate culture development, enhancing the bond between employees and the company. Slack uses an AI system that evaluates employees based on their daily performance and real-time conversations, providing a more fair evaluation system for the company. According to Forbes, this approach increased employee engagement by 40%, significantly enhancing work efficiency.

4. Case Summary

In summary, the refinement and development of artificial intelligence (AI) technology have had significant effects on optimizing corporate structure and enhancing efficiency. Through the application of automation and intelligent technology, enterprises can optimize departmental functions and business processes, improving production efficiency and customer service levels. Additionally, through precise data analysis and decision support, enterprises can make more scientific and reasonable business decisions. In the future, as AI technology continues to evolve and become more widespread, its role in optimizing corporate structure and enhancing efficiency will become even more pronounced. However, when introducing AI technology, enterprises should also fully consider factors such as their actual situations and technical thresholds, formulating reasonable implementation strategies to ensure the smooth advancement of technology application.

5. Regression Analysis

- (1) Regression analysis is used to verify, through survey data, that the development of AI has a relative impact on individuals engaged in human resources-related industries.
- (2) Dependent Variable: Competitive Pressure/Work Efficiency
- (3) Independent Variables: AI Assistance (Yes/No); Level of AI Assistance (1-5)

6. Results and Discussion

With the rapid development and continuous improvement of AI technology, it has exerted a profound impact on both the human resources industry and the overall operation of enterprises, bringing both unprecedented challenges and opportunities.

In human resources-related industries, the introduction of AI undoubtedly poses challenges to traditional work modes. The application of technologies such as automated resume screening, intelligent interview evaluations, and performance predictions based on big data has led to the replacement of some basic and repetitive human resources tasks by machines, requiring practitioners to continuously upgrade their skills and transition to higher-level strategic and analytical roles. Although this transition brings pressure on career development, it also provides human resources practitioners with broader career development spaces and richer career paths. By mastering skills in data analysis and AI application, human resources practitioners can more accurately insight into corporate needs, formulate more forward-looking and targeted human resources strategies, thereby creating greater value for enterprises.

Meanwhile, the refinement and development of AI technology have had significant effects on optimizing corporate structure and enhancing efficiency. Through the application of automation and intelligent technology, enterprises can optimize internal processes, reduce manual intervention, and improve operational efficiency. The introduction of intelligent decision support systems enables enterprises to make more scientific and reasonable decisions based on big data and algorithmic analysis, reducing business risks. Furthermore, AI promotes the flattening of corporate organizational structures, accelerates decision-making speed, and enhances organizational flexibility and responsiveness. These changes not only enhance the market competitiveness of enterprises but also lay a solid foundation for their sustainable development.

In summary, the development of AI has had a profound impact on individuals engaged in human resources-related industries and the overall operation of companies. Faced with both challenges and opportunities, human resources practitioners should actively embrace change and enhance their skill levels, while enterprises

should fully leverage the advantages of AI technology to optimize internal structures and improve operational efficiency to cope with increasingly fierce market competition. Of course, we must also recognize that the development and application of any AI technology will not be smooth sailing, and there will inevitably be some issues and risks. From the current application scenarios, some problems may emerge during use, and we need to maintain a clear understanding of them. For example, data privacy and security, over-reliance on technology that neglects human agency, etc. In practical applications, we need to find the balance between human-computer interaction and regularly evaluate its implementation effectiveness.

7. Related Potential Negative Impacts

7.1 Employee Mental Health Aspects

Firstly, with the proliferation of artificial intelligence, employees need to continuously learn and adapt to new technologies and tools, which may bring them additional stress and anxiety. Some employees fear that AI will replace their jobs, leading to uncertain career prospects and subsequently generating occupational anxiety. Meanwhile, AI may change the content and methods of employees' work, making it difficult for them to adapt to new work environments and workflows. Such changes can lead employees to feel frustrated and lost, subsequently having a negative impact on their mental health. Lastly, employees may experience loneliness and social barriers in their work. Over-reliance on AI may result in reduced human-to-human interaction and communication, thereby affecting the development of social skills and interpersonal relationships. Prolonged interaction with AI may also make humans feel lonely, leading to mental health issues.

7.2 Job Security Aspects

The widespread application of AI and automation technologies has led to many traditional, repetitive jobs being replaced by intelligent machines. This may expose employees to the risk of unemployment, increasing employment instability and posing challenges to their job security. To address these related challenges, employees need to continuously update their skills and knowledge to adapt to new work environments. However,

some employees may be unable to keep pace with technological advancements, leading to skill obsolescence. This may require employers to provide more retraining opportunities to meet employees' needs and protect their employment rights.

Meanwhile, it is also important to note that the application of AI technologies typically involves the collection and processing of a large amount of personal data. This increases the risk of employees' privacy and data security being violated, thereby posing a threat to their occupational safety. Furthermore, if the training data for AI systems contains bias or discrimination, their decision-making outcomes may also be biased. This can lead to unfair treatment in recruitment, promotion, and compensation, damaging employees' rights and resulting in algorithmic discrimination and bias.

8. Discussion on Policies and Legal Impacts in Ensuring Data Privacy and Employee Rights in the Era of AI and Human Resource Integration

8.1 Data Privacy Protection

8.1.1 Development of Laws and Regulations

Governments of various countries should formulate and improve data protection laws, clarify the statutory obligations of data processors, and provide legal safeguards for privacy protection. Examples include the General Data Protection Regulation (GDPR) of the European Union and the California Consumer Privacy Act (CCPA) of the United States. Establish fundamental principles and systems for personal information protection, and standardize the collection, use, processing, and transmission of personal information.

8.1.2 Corporate Responsibility and Actions

Companies should develop comprehensive privacy policies and data protection norms, clarifying requirements and restrictions on the collection, use, storage, and sharing of personal information. Adopt advanced data encryption, desensitization, access control, and other technical means to ensure the security and privacy of personal information. Regularly conduct data security risk assessments and management to ensure compliance with data privacy regulations.

8.1.3 Individual Rights and Obligations

Individuals have the right to know about the collection, use, and processing of their personal

information, including the purpose of collection, methods of use, and scope of processing. They have the right to require information controllers to take necessary security measures to ensure that their personal information is not leaked, tampered with, or destroyed. Individuals should respect the privacy rights of others and refrain from any form of snooping, stealing, or disseminating others' private information.

8.2 Employee Rights Protection

8.2.1 Prevention of Algorithmic Discrimination

The decision-making and recommendation algorithms of AI systems may be influenced by biases and discrimination in personal data. Therefore, companies should ensure the neutrality and fairness of algorithms to prevent algorithmic discrimination. Regularly review and evaluate algorithms to ensure they comply with laws, regulations, and ethical standards.

8.2.2 Ensuring Employment Stability and Career Development

With the proliferation of AI, some traditional, repetitive jobs may be replaced. Companies should help employees adapt to new work environments and requirements through training and transformation programs. Establish reasonable compensation and promotion mechanisms to ensure that employees' career development is not limited by AI technology.

8.2.3 Enhanced Employee Privacy Protection

When processing employee personal data, companies should strictly comply with relevant laws, regulations, and privacy policies. Regularly conduct privacy protection training for employees to raise their awareness of privacy protection.

8.2.4 Establishment of Employee Complaint Mechanisms

Companies should establish employee complaint mechanisms that allow employees to file complaints against any actions that may violate their privacy or rights. Handle employee complaints promptly and impartially to ensure the protection of employees' legitimate rights and interests.

9. Potential Challenges of Artificial Intelligence Technology in the Future

9.1 Technological Challenges

Despite significant advancements in artificial intelligence (AI) technology, there are still technological bottlenecks in certain aspects,

such as algorithm optimization and model training efficiency. Enhancing technological maturity is a long-term process requiring continuous research and investment. Meanwhile, the effectiveness of AI technology largely depends on the quality of data. Inaccuracies, incomplete data, or biases can all impact algorithm performance and accuracy. Data security is also a crucial issue, including data protection and prevention of privacy breaches. Therefore, we need to seek more efficient and energy-saving solutions.

9.2 Societal and Economic Challenges

The widespread application of AI technology may lead to the disappearance of some traditional jobs, such as simple repetitive tasks in manufacturing and low-skill positions in the service industry. This will trigger changes in the employment structure and have far-reaching impacts on the labor market. Those unable to access or use AI technology may face greater societal and economic pressures.

9.3 Challenges in Employee Skill Requirements

The rapid evolution of technology in the AI field brings forth new algorithms, models, and tools continuously. Employees need to continuously learn new knowledge and skills to adapt to this rapid technological development. The application of AI technology often involves multiple disciplines, such as mathematics, statistics, computer science, and psychology, capable of processing large-scale, high-dimensional data and extracting valuable information from it. Employees need interdisciplinary knowledge and skills to better understand and apply AI technology. Companies need to stay abreast of technological advancements, provide training and development opportunities for employees, encourage them to broaden their knowledge, cultivate interdisciplinary thinking, and improve their problem-solving abilities to help them keep pace with technological updates. However, ethical and moral issues cannot be overlooked. Employees need to possess ethical and moral awareness and comply with relevant laws, regulations, and ethical norms when using AI technology. Companies need to strengthen ethics and moral education to guide employees in establishing correct values and professional ethics.

9.4 Challenges in Corporate Adaptation

The investment costs of AI technology are high, including hardware equipment, software tools, research and development personnel, and training expenses. While weighing the relationship between technological investment and return, companies need to formulate reasonable investment strategies and adjust their organizational structures to adapt to the new technological environment. This may include optimizing departmental settings, adjusting job responsibilities, and enhancing cross-departmental collaboration. As some traditional jobs may be automated and replaced, companies need to provide employees with training and transformation opportunities to help them adapt to new work environments and job requirements. This may include skills training, career planning guidance, and job adjustments. Furthermore, the application of AI technology involves the collection and processing of a large amount of data. Companies need to strengthen data security and privacy protection to prevent data breaches and misuse. This may include establishing a sound data management system, strengthening data encryption and access control, and conducting regular security audits. Engaging professional lawyers, participating in industry seminars, and paying attention to policy documents can help ensure that their business complies with relevant laws, regulations, and regulatory requirements.

10. Research Innovation

Practical Innovation: Considering that previous literature is outdated and does not align with the current technological development, this article provides additional data for future research to reference.

Theoretical Innovation: In the face of the rapid development of artificial intelligence technology, many practitioners in traditional industries are facing pressure for career transitions and skill upgrades. Theoretical innovation plays a crucial role in this process, offering valuable advice and guidance to these practitioners. It particularly

assists them in establishing correct career perspectives and values, enhancing their self-confidence and adaptability.

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