

Based on the Two-factor Theory, The Influence of Artificial Intelligence on Employee Motivation Is Analyzed

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Abstract: This article aims to explore the impact of the introduction and application of artificial intelligence in enterprises on employee motivation in the current age of artificial intelligence. Based on the two-factor theory, this study designs interview questionnaires to analyze the changes in employee motivation from the perspectives of motivating factors and hygiene factors. The following issues are identified: firstly, artificial intelligence has a negative impact on employment by replacing jobs and leading to a significant number of employee layoffs. Secondly, artificial intelligence contributes to organizational fairness by using cloud computing to screen employees, with education and skills becoming important criteria for employee promotion, thereby stimulating employee motivation. Thirdly, artificial intelligence infringes on employee privacy by risking the leakage of employee information and excessively interfering with their normal lives, such as through harassing phone calls, suppressing employee motivation.

Keywords: Two-factor theory, Enterprise employees, Motivating factors, Hygiene factors, Artificial intelligence.

1. Introduction

This article is set against the backdrop of the rapid development of artificial intelligence in the current era. China has promulgated significant strategic regulations such as “Made in China 2025” and “New Generation Artificial Intelligence Development Plan”.[1] Major cities such as Beijing and Shanghai have also issued important documents supporting the development of artificial intelligence, such as the “Implementation Plan (2023-2025) to Accelerate the Construction of a Globally Influential Artificial Intelligence Innovation Hub in Beijing.” The introduction of artificial intelligence in enterprises necessitates reforming employee motivation systems, as the coexistence of employee motivation and artificial intelligence poses challenges to operational efficiency. Therefore, studying this issue is of great importance.

This article aims to address the problems arising from the introduction of artificial intelligence by examining the changes in the work environment, job nature, and employee motivation brought about by artificial intelligence from both the psychological and material aspects. This study provides a research case for the application of human resource management and artificial intelligence.

2. Literature Review

Regarding the two-factor theory, George elieves that both material and psychological motivations, such as job prospects, are important motivational factors. Gravett and Dmorton found that opportunities for development, a free work environment, and higher salaries are the main factors influencing the high loyalty of the new generation of employees. Richardson suggests that clear career development paths and sufficient internal promotion opportunities can fully motivate employees. Shannon analyzed the importance of communication as a factor

affecting work motivation through Herzberg's two-factor model. Banu studied a large company and found that establishing a training system within the company can enhance employee motivation.

Regarding artificial intelligence, various countries have actively established AI research institutions, guided research and development investment, emphasized talent cultivation, built computing and data infrastructure, improved platform and resource utilization, and formulated industry application policies and regulations to create a favorable environment for AI development. For example, the National Artificial Intelligence Research and Development Strategic Plan: The 2019 Revision released by the U.S. National Science and Technology Council outlines the priority areas for AI research and development investment, focusing on the rapid development of cutting-edge fields. The European Commission has also proposed the “Artificial Intelligence Act (2021)”.

In current literature in China, there is insufficient discussion on the legal issues related to AI usage. Some companies utilize employee-uploaded databases, which raises disputes regarding whether the works created by AI result in infringement or illegal activities. However, it cannot be denied that AI creation greatly suppresses employee creativity and leads to a decline in employee motivation.

Currently, the development of artificial intelligence has broad coverage, intense international competition, and is gradually advancing into deeper domains. The level of technology is rapidly improving in the short term. Various industries, such as education, healthcare, and finance, are integrating and developing with AI, leading to the emergence of many internet-based companies and educational approaches. AI is also attempting to compete with humans in terms of creativity, such as the match between the Go champion and AlphaGo, AI-generated articles, and AI painting. Furthermore, AI has rapidly gained proficiency in these areas and possesses a vast database of information.

Consequently, when more and more companies begin to introduce artificial intelligence, employee motivation is affected.

3. Methodology 1: interviewing method

Hypothesis: The introduction of artificial intelligence

replaces highly repetitive positions, leading to a significant number of employee layoffs.

During the interviews conducted in multiple companies, 20 employees were asked the question “Has your position changed due to the introduction of artificial intelligence?” The data obtained is as follows:

Table 1. Result

Employee type	concrete content	number of people	Rate
Junior staff (mainly mechanical work)	Pay reduction	12	60%
	Hiring is down		
Manager level	Increased training requirements	5	25%
Department manager	Postgraduate degree required	3	15%

Multiple interviewed employees responded to the basic situation. Some low-end jobs have been replaced by artificial intelligence, which only require a few employees or even no employees to operate. This is also one of the core conflicts between AI and human resource management. After introducing artificial intelligence, tasks such as data analysis and production in the assembly line can be done more efficiently by AI, leading to changes in the working environment and occupational health factors. A large number of grassroots employees engaged in repetitive jobs have been laid off, as AI occupies their work space and workload. As a result, 60% of the employees have reported a decrease in their corresponding remuneration. On the other hand, the introduction of AI has increased the requirements for managers and positions related to management, demanding high knowledge reserves and postgraduate education. Consequently, structural unemployment has emerged, which has lowered the motivation of employees.

This indicates that with the occupation of low-end jobs by artificial intelligence, employees’ own abilities will become an important criterion. Many employees lack core competitive advantages and are at risk of unemployment.

3.1 Conclusion 1: Artificial intelligence has replaced some jobs that require strong mechanical skills, leading to decreased employee compensation and unemployment, resulting in decreased employee satisfaction and motivation.

3.2 Countermeasure 1: Establish a new compensation system, appropriately expand the salary grade difference, and arrange for reasonable job rotations for employees.

After introducing artificial intelligence, both the workload and work methods of employees have changed. Relying solely on the previous compensation model is not feasible. Companies should understand employees’ demands through employee surveys and other means, and arrange corresponding salary grades based on the changed workload. Subsidies should also be provided to employees who have been laid off according to regulations. Some employees have expressed concerns about small salary grade differences and outdated professional skills. Therefore, labor-intensive companies should focus on the cultivation of professional talents, appropriately expand the salary grade difference, and place emphasis on performance design to tap into employees’ motivation at a deeper level. Salary grade should be considered from the perspective of occupational health factors, taking into account the workloads that can be replaced by artificial intelligence, the working environment, and the alignment of salary treatment with workload. Employees need to establish a reasonable division of labor with artificial intelligence, viewing it as a complementary advantage rather

than a substitute. After artificial intelligence replaces low-end repetitive jobs, the main focus of enterprise training should shift towards developing high-skilled talent. Employees need to constantly enrich their knowledge, improve communication and job skills, and enhance their competitive abilities. Companies can provide onboarding training to meet employee needs.

4. Methodology 2: Compare The Employee Equity Incentives

Assumption 2: Artificial intelligence contributes to organizational equity. By using cloud computing to screen employees, educational background and abilities become important criteria for employee promotion, which stimulates employee motivation.

Result: Previously, employee recruitment and internal promotion were mainly reviewed by the HR department through reviewing resumes and internal recommendations. After introducing artificial intelligence, cloud computing automatically categorizes job applicants based on criteria such as education and experience, expanding the range of candidates and providing more options. The criteria for internal promotion are also comprehensively evaluated by artificial intelligence, considering employees’ past performance, abilities, and achievements. It also analyzes employees’ personality stability, lists the priority order for employee promotion, predicts the likelihood of an employee leaving the company, and identifies their future development potential. This approach is fairer and more comprehensive than solely relying on personal connections, promising employees future development, recognizing their abilities, and meeting their psychological needs, thereby enhancing employee motivation.

4.1 Conclusion 2: Artificial intelligence broadens employees’ channels for promotion, increases job opportunities, boosts employees’ confidence, and enhances their motivation.

4.2 Countermeasure 2: The advantages of artificial intelligence in recruitment should be utilized by considering AI data as an important reference for employee promotion. However, over-reliance on cloud computing data should be avoided as it may not fully showcase employees’ adaptability and comprehensive abilities in real-time situations.[2]

After the reform of the company, clear regulations should be established regarding the reliability of data collected by artificial intelligence. The relative weight of employee performance and adaptability in AI assessments for employee promotion should be specified. This should include big data

and the establishment of a talent resource library with the company's unique characteristics.[2] The most prominent incentive for employees through artificial intelligence is to match talents with positions, pairing employee resumes with job requirements. Artificial intelligence possesses learning capabilities and, after analysis, can select the most suitable candidates for transfer or promotion. This allows employees' abilities to be utilized correctly, creates a work environment that meets their needs, maximizes their value, and satisfies the hygiene factors in the two-factor theory.

5. Methodology 3: Correlation Analysis of Privacy

Assumption 3: Artificial intelligence invades employee privacy, causing potential information leaks and excessive

interference in employees' personal lives, such as harassing phone calls. This can lead to employee resistance and a decline in motivation.

The survey compared positions with high adoption of artificial intelligence to those without it. Employees in positions with AI applications received 2-3 times more harassing phone calls and messages compared to employees in positions without AI applications. Interviews revealed that employees using AI for office work and cloud computing connectivity after joining the company had to provide personal information. After their information was collected, employees experienced varying degrees of harassment, which negatively impacted their motivational factors and led to a subsequent aversion to information collection work, thereby reducing job motivation.

Table 2. Telephone harassment and information collection degree correlation analysis data statistics

	average number	standard deviation	N
make nuisance call	5.80	3.225	10
Percentage of information collection degree	25.20	12.090	10

5.1 Conclusion 3: Enterprises using artificial intelligence to collect employee information can lead to negative impacts on employee motivation when the leaked information is used by other groups to harass employees through phone calls, messages, etc.

5.2 Countermeasure 3: Strengthen privacy protection and information management efforts, strictly control the frequency of leaks.

Most instances of employee harassment occur because companies need to collect employee information, authenticate employee permissions, and obtain login information through the Internet. Inadequate website information protection measures, insufficient privacy protection, and unclear agreements with partner websites are important causes of information leaks.

Enterprises should improve relevant regulations, restrict the extent of employee information collection, implement information protection measures, ensure that employee phone numbers and ID numbers are not leaked, and consider using privacy number protection or virtual numbers to reduce the chances of employee harassment. Frequent harassment can distract employees and create a negative attitude towards work-related information collection by the company.

6. Methodology 4: Case Analysis of Conflicts Between Employee and AI

Assumption 4: Employees distrust AI recommendations and judgments, which can negatively impact their motivation when conflicting with their own judgments.

During the initial introduction of AI algorithms in high-level enterprise domains, leaders and technical professionals may lack tolerance for AI. In the early stages, AI analysis techniques are not mature and can result in errors, which employees can identify. However, as AI technology matures, the accuracy of analysis results increases. If the predicted results conflict with employee judgments, it can lead to a crisis of trust. Implementing an AI solution in such situations can diminish employee motivation and make them feel untrusted, thus affecting motivational factors. In a survey, the market forecasting department of Company B established a comprehensive market sales data system and predicted future

demand trends. For their newly launched product, analysts identified numerous customer feedback issues and predicted a decrease in sales within the next month. However, the AI forecasted that the sales would remain stable and unaffected. The analyst did not agree with this result and insisted that the company should focus on product improvement. Unable to make a judgment, the department manager finally accepted the analyst's prediction after a month of stable sales followed by a decline. The employees became dissatisfied, and during the previous month, the analyst experienced self-doubt and self-denial due to a lack of trust from their superiors. This greatly undermined the employee's morale, motivation, and self-esteem, damaging the effectiveness of motivational factors and affecting the employees' positive attitude.

6.1 Conclusion 4: When disagreements occur between artificial intelligence and employees, it can negatively impact employee motivation and have a negative effect on motivation-related issues.

6.2 Countermeasure 4: Guiding employees in adopting a dialectical approach to AI is crucial. AI has strong learning capabilities but requires employee cooperation for its evolutionary development. Enterprises should improve training methods by incorporating introductions to and exercises on artificial intelligence. They should also develop contingency plans for potential conflicts between human resources and artificial intelligence in later stages. Establishing a judgment system for disagreements can prevent employee confusion caused by AI involvement and mitigate the negative impact on employee motivation. Only through mutual cooperation can the advantages of both human and artificial intelligence be effectively combined to inspire employee motivation. Companies should ensure that employees feel secure by implementing social trust mechanisms to protect their salary and benefits. This will help alleviate employee concerns when introducing artificial intelligence to assist in their work.[4]

In summary, based on the dual-factor theory structure, artificial intelligence influences motivational and hygiene factors, resulting in both positive and negative effects on employee motivation. Enterprises should proactively establish management regulations concerning artificial intelligence. This article explores and researches the

relationship between human resource management and artificial intelligence.

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