



Artificial Intelligence Adoption Intensity and Employee Job Well-being: Analysis and Countermeasures Based on Knowledge-Based Work

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Abstract. As artificial intelligence technology continues to be embedded in organizational contexts, its impact on employee work experience and subjective well-being has gradually become an important topic of academic concern. Compared to existing research that largely explores the impact of AI on work from the perspectives of technological substitution and risk, this paper, based on the real-world context of knowledge-based work, focuses on the mechanisms by which the intensity of AI adoption may positively influence employee job well-being. To address this issue, this paper systematically analyzes the intrinsic relationship between the intensity of AI adoption and employee job well-being from three aspects: workload, emotional experience, and work flexibility. Furthermore, AI significantly enhances employee work flexibility and autonomy in supporting flexible work arrangements, intelligent task allocation, and personalized work support, creating favorable conditions for work-life balance. Building upon this foundation, this paper further proposes three countermeasures from a management practice perspective: optimizing AI application scenarios to continuously reduce low-value burdens, incorporating efficiency goals and employee experience goals into a unified evaluation framework, and enhancing work flexibility and autonomy through AI tools. The findings of this paper expand the theoretical perspective on AI and job well-being research, providing a new explanatory path for understanding the positive humanistic effects of AI in organizations, and offering valuable insights for enterprises to achieve synergistic development of efficiency improvement and employee well-being in the process of promoting AI applications.

Keywords: Artificial Intelligence Adoption Intensity; Job Happiness; Knowledge Work; Employee Well-being.

1 Introduction

With the widespread application of artificial intelligence (AI) technology in organizations, AI has gradually evolved from an auxiliary tool into an essential component assisting workflows. For businesses, AI enables better management and planning. For employees, AI significantly improves the efficiency of knowledge-based work and

transforms their work experience through automated information processing, text generation, and decision support. In the current work environment, the application of AI and related technologies is seen as a crucial way to improve work efficiency, optimize decision-making quality, and promote innovation, generating positive impacts in both academia and industry. However, unlike the generally optimistic outlook in industry, academia often analyzes the impact of AI in the workplace from a pessimistic and threat-oriented research perspective, viewing AI as a threat to employees and overemphasizing its potential negative consequences.

Mainstream research on artificial intelligence and employee productivity has found that the value of AI lies not only in improving productivity but also in its potential to positively impact employee well-being by improving work methods, reducing cognitive load, and optimizing work experience. This type of job well-being has a positive long-term impact on both companies and employees. However, existing research still lacks systematic analysis on whether and how the intensity of AI adoption improves employee job well-being. For example, the financial services industry uses AI for risk assessment and investment decisions, while the education industry leverages intelligent teaching systems to provide personalized learning support. As of 2023, over 35% of organizations globally had adopted some form of AI technology in their core business processes, and this figure is projected to reach 75% by 2025. In the context of artificial intelligence applications, job skill requirements may have a positive impact on employees' job satisfaction [1]. The changes in job skills brought about by artificial intelligence technology are mainly reflected in the higher requirements for employees to work collaboratively with machines and equipment and to be creative, which often makes employees feel that their work is more growth-oriented [2, 3]. Therefore, employees evaluate the increase in job requirements as challenging pressure. On the one hand, employees actively cooperate with intelligent machines and experience the excitement, sense of accomplishment and transcendence brought about by mastering new technologies in their work, which stimulates their enthusiasm and vitality to explore new work areas and increases their job satisfaction [4]. On the other hand, job requirements with learning needs, such as work innovation and flexibility, will prompt employees to learn new skills and grow and develop through continuous learning, thereby improving their job satisfaction level [5].

2 Analysis

This section analyzes the intrinsic relationship between the intensity of AI adoption and the improvement of employee job well-being from three aspects.

2.1 AI Adoption Intensity and Workload Relief

AI effectively reduces the workload of knowledge workers by undertaking a large number of repetitive and standardized information processing tasks. When AI is applied frequently and stably in daily workflows, employees no longer need to spend a lot of time dealing with low-value tasks, but can concentrate their energy on more chal-

lenging and valuable work content. Based on meaning construction theory, when faced with the cognitive uncertainty brought about by the introduction of AI technology, employees usually exhibit two coping strategies: passive avoidance and active construction. For employees, this coping mechanism often triggers technological resistance and job anxiety, exacerbates job insecurity, and fosters a long-term disconnect between employees and their employers and bosses [6, 7]. Therefore, current research suggests that active constructivism refers to employees proactively investing cognitive resources to reinterpret the value and significance of AI technology, bringing effective benefits from both academic and practical perspectives. This coping mechanism not only effectively alleviates cognitive dissonance but also enhances employees' confidence and motivation to adapt to technological change, while also supporting CEO decision-making.

Workplace well-being refers to the comprehensive positive emotions and cognitive evaluations experienced by employees in their work environment. This comprehensive emotion shapes employees' work performance and development, and influences corporate choices in the long term. It transcends the traditional concept of job satisfaction, encompassing broader psychological health and well-being factors, emphasizing the connection between companies and employees and the extent to which AI tools are used. Therefore, reducing workload helps alleviate employees' psychological stress and time anxiety, enabling them to gain a stronger sense of control and comfort at work, thereby improving overall job well-being.

2.2 Intensity of Artificial Intelligence Adoption and Work Efficiency

High-intensity artificial intelligence applications can significantly improve task completion efficiency, enabling employees to obtain visible results faster. Efficiency improvement not only improves performance but also strengthens employees' sense of accomplishment and self-efficacy. While empowering organizations, digital technology also brings unprecedented challenges to emotional management in organizations. The rapid popularization of artificial intelligence, algorithms, and big data in organizations has brought new emotional management challenges such as work technology overload, social isolation under algorithm management, emotional exhaustion caused by blurred role boundaries, and job insecurity caused by automation technology [8]. For example, under the sophisticated algorithmic control of Meituan's "Super Brain" and Ele.me's "Ark," gig workers may experience emotional exhaustion and anomie, and even cause traffic accidents and serious injuries due to emotional breakdowns; the gig work environment may also cause employees to lose meaningful references and group belonging, falling into confusion and anxiety about their self-identity [9].

2.3 Increased Adoption Intensity and Work Flexibility of Artificial Intelligence

The widespread adoption of artificial intelligence tools has enhanced work flexibility, giving employees more choices in scheduling, work methods, and task execution. Specifically, previous work models often required employees to be highly focused

and results-oriented. However, with advancements in AI technology, both employees and employers have more options. For example, AI can support asynchronous collaboration, rapid information retrieval, and remote work, thereby reducing unnecessary coordination costs. With the rapid development of AI technology, many are beginning to focus on its impact on the future work environment. While current AI technology still has its limitations, from automating tasks to decision support, AI is permeating all industries at an unprecedented pace, changing how we work, what our work entails, and the meaning of our work. Therefore, we should give more support to the convenience brought by technology. On the other hand, employees often worry that AI will replace human labor. Advances in AI and robotics may replace some repetitive and labor-intensive jobs, but it also creates new job opportunities and injects new vitality into traditional job roles. Therefore, it's better to view AI as a powerful "enhancer" that can collaborate with humans, optimize workflows, improve efficiency, and drive innovation, rather than as a "replacement" of future jobs.

3 Solutions

Given that the adoption of artificial intelligence can enhance job satisfaction, organizations need to further amplify this positive effect through reasonable strategies.

3.1 Optimize AI Application Scenarios

Organizations should prioritize the application of artificial intelligence to repetitive, rule-based, and low-value-added work processes to ensure that artificial intelligence continues to play a role in reducing workload. To more clearly characterize the applicability of artificial intelligence in different tasks and its workload-reducing effect, the following content will be formally analyzed from three levels: task structure, workload, and job satisfaction. When a task is highly repetitive and has clear rules, but its creativity and added value are low, the application efficiency of artificial intelligence in that task is the highest. According to the following formula [10]:

$$AI_{Fit_i} = \frac{R_i \cdot S_i}{V_i} \quad (1)$$

where R_i represents the repetitiveness of task i , S_i represents the clarity of the task's rules, and V_i represents the added value or creativity of the task. This function is used to measure the suitability of artificial intelligence for task i . When a task has high repetitiveness and clear rules, but low creativity and added value, the application efficiency of artificial intelligence in that task is the highest. This model provides a formal basis for organizations to identify "low-value, high-burden" tasks, which helps to prioritize the allocation of artificial intelligence in the work links where the burden reduction effect is most significant. At the same time, the employee workload reduction function [11]:

$$WL_l = WL_j^0 - \sum_{i=1}^n AI_{Fit_i} \cdot T_{ij} \quad (2)$$

where WL_j^0 represents the initial workload of employee j , WL_j represents the workload after the introduction of artificial intelligence, and T_{ij} represents the proportion of time employee j spends on task i . The change in the overall workload of employees can be regarded as the sum of the burden reduction effect of artificial intelligence on different task dimensions. When artificial intelligence mainly covers highly adaptable tasks, the time spent by employees on repetitive and low-value work is significantly reduced, thereby effectively reducing the overall workload. Regarding the function of improving job satisfaction [12]:

$$JH_j = \alpha - \beta \cdot WL_j + \gamma \cdot A_j \tag{3}$$

where JH_j represents employee j 's job well-being level, WL_j represents employee j 's workload, A_j represents the employee's perceived level of autonomy and control over their work, $\beta > 0$ is the negative impact coefficient of workload on well-being, and $\gamma > 0$ is the positive impact coefficient of autonomy on well-being. Job well-being depends not only on the absolute level of workload but also on the employee's sense of control over their work. When artificial intelligence significantly reduces workload by assigning low-value tasks, employees' stress and emotional expenditure decrease accordingly. Simultaneously, in a supportive role, artificial intelligence can enhance employees' sense of control over work rhythm and task allocation, thus promoting job well-being through a dual pathway. By systematically optimizing the use cases of artificial intelligence, employees can more steadily benefit from reduced workload, thereby forming a long-term mechanism for improving well-being.

3.2 Integrating Efficiency Improvement with Employee Experience Goals

In the realm of customer experience, personalization is the ultimate lever. Delivering the right insight or product at the precise moment it is needed creates a multiplier effect on engagement. Research into industry leaders reveals a common thread: a relentless drive to decode and satisfy evolving digital consumer demands. Success lies in building a continuous brand-to-consumer resonance. Only by continuously building brand-customer connections can companies better serve consumers and ultimately win them over. Similar to customer experience, personalization is a core criterion for measuring employee experience, and corporate human resources should establish a service-oriented approach to achieve "personalization." Modern teams are increasingly heterogeneous, blending full-time staff, part-time workers, and freelancers across different generations, personalities, and geographies. To truly win in this era, enterprises must tailor their internal services to meet these diverse professional aspirations.

Table 1. Dual-Goal Evaluation Framework for AI Projects: Efficiency and Employee Experience

Evaluation Dimension	Indicator	Description	Managerial Implications
Efficiency Performance	Task Completion Time	Changes in the time required to complete tasks before and	Reflects the extent to which AI improves

		after AI implementation	workflow efficiency
	Error Rate Reduction	The degree to which decision or execution errors are reduced with AI assistance	Indicates AI's contribution to work quality and process stability
	Output Consistency	The level of standardization and consistency in work outputs	Captures AI's role in process normalization and reliability
Employee Experience	Job Satisfaction	Employees' overall evaluation of their job content and work environment	Reflects whether AI improves overall work perception
	Emotional Experience	Employees' levels of stress, enjoyment, and emotional exhaustion at work	Measures AI's impact on employees' psychological states
	Job Happiness	Employees perceived work meaning, value, and long-term engagement	Indicates the sustainable, human-centered value of AI adoption
Integrated Balance	Efficiency–Experience Alignment	The extent to which efficiency gains are accompanied by improvements in employee experience	Prevents the “high-efficiency–low-happiness” technology paradox
	Employee Acceptance	Employees' willingness to continuously use AI tools	Reflects the long-term feasibility of AI implementation

Table 1 provides a comprehensive evaluation of AI projects from two dimensions: efficiency and performance, and employee experience. It emphasizes that technology applications should not solely pursue short-term output maximization but should focus on employees' subjective feelings and long-term well-being within the AI environment. By introducing employee experience indicators, organizations can more accurately determine whether AI applications have achieved the synergistic goal of "efficiency improvement—experience enhancement," thereby avoiding an imbalance between technological efficiency and human value. Incorporating employee satisfaction, emotional experience, and well-being into the evaluation system of AI projects can guide technology applications towards the dual goals of "improved performance—enhanced experience."

3.3 Leveraging Artificial Intelligence to Enhance Work Flexibility and Autonomy

Organizations can leverage artificial intelligence tools to support flexible work arrangements, such as flexible scheduling, intelligent task allocation, and personalized work support. To summarize the mechanisms through which AI enhances work flexibility and autonomy, Table 2 presents an integrated overview linking AI-enabled practices to employee experience outcomes.

Table 2. AI-Enabled Work Flexibility, Autonomy, and Employee Happiness

AI-Enabled Practice	Dimension of Flexibility	Dimension of Autonomy	Impact on Employee Experience
Flexible scheduling systems	Temporal flexibility	Control over working hours	Reduces time pressure and work–life conflict
Intelligent task allocation	Task flexibility	Choice in task sequencing and workload	Enhances perceived control and efficiency
AI-supported remote work tools	Spatial flexibility	Autonomy over work location	Increases comfort and job satisfaction
Personalized work support (e.g., AI assistants)	Cognitive flexibility	Discretion in work methods	Reduces cognitive overload and stress
AI-driven performance feedback	Adaptive flexibility	Self-regulated performance adjustment	Strengthens self-efficacy and motivation

As shown in Table 2, AI contributes to employee happiness not only by improving efficiency but also by reshaping work structures. By enhancing temporal, spatial, task-related, and cognitive flexibility, AI tools increase employees perceived autonomy and control over their work, which are essential psychological drivers of positive work attitudes and job happiness. As an emerging topic in the field of work autonomy, the impact of digital technology on autonomy has attracted the attention of many authoritative international journals in recent years. The deep integration of big data, cloud computing, and artificial intelligence, along with the development of the sharing economy, has given rise to online labor platforms that are building new employment methods and work scenarios based on digital technology. Can workers autonomously acquire tasks? The initial purpose of developing online labor platforms was to utilize idle labor resources, provide workers with customer information resources, and enable workers to autonomously search for job opportunities to achieve supply and demand matching.

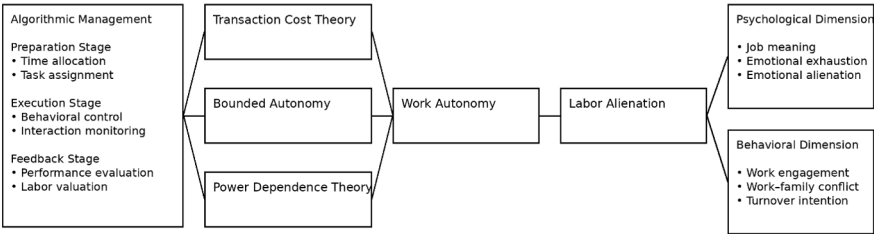


Fig. 1. Integrated Framework

Figure 1 illustrates how algorithmic management practices reshape work autonomy through different managerial stages, which in turn influence labor alienation and subsequent psychological and behavioral outcomes. When employees experience greater autonomy and flexibility in an AI-driven environment, their positive attitude towards work and sense of well-being will be further enhanced.

4 Conclusion

This paper analyzes the impact of AI on the work environment, focusing on the influence of AI adoption intensity on employee job well-being. It argues that AI can effectively improve employee job well-being by alleviating workload, enhancing efficiency leading to positive emotional experiences, and increasing work flexibility. Based on this analysis, this paper suggests that by rationally designing AI application strategies, organizations can not only improve efficiency but also enhance employee work experience, thus promoting sustainable organizational development. Specifically, this study demonstrates that AI adoption intensity can promote employee job well-being. AI adoption intensity and workload relief, AI adoption intensity and positive emotional experiences from work efficiency, and AI adoption intensity and increased work flexibility all contribute to AI's impact on employee job well-being to varying degrees. These impacts can not only quickly solve corporate problems but also strengthen the connection between companies and employees by improving employee work efficiency and well-being, thus supporting corporate development in the long term. In response to these impacts, this study suggests that future managers or research directions should focus on optimizing AI application scenarios, continuously reducing low-value burdens on employees, combining efficiency improvements with employee experience goals, and leveraging AI to enhance work flexibility and autonomy to improve employee job well-being. For businesses, increased employee well-being effectively enhances employees' core motivation, improving work performance in the long run and thus increasing their contribution to the company. For employees, increased well-being helps balance the conflict between work and life, reducing the occurrence of conflicts and thereby improving company performance.

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