



The Double-Edged Impact of Artificial Intelligence on Employee Performance: A Systematic Literature Review

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Abstract:

Artificial Intelligence (AI) has rapidly transformed workplaces by reshaping employee roles, organizational processes, and performance outcomes. While AI enhances productivity, decision-making, and innovation, it simultaneously introduces challenges such as job insecurity, skill obsolescence, algorithmic bias, surveillance concerns, and employee stress. Existing studies present fragmented evidence regarding AI's positive and negative effects on employee performance. Therefore, this study systematically reviews the literature to synthesize current knowledge on the dual impact of AI in organizational settings. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, peer-reviewed studies published between 2018 and 2026 were reviewed from Scopus-indexed journals. The findings reveal that AI positively influences employee performance through automation, improved decision support, personalized learning, and enhanced collaboration. Conversely, excessive AI dependence may reduce employee autonomy, increase technostress, create ethical concerns, and negatively affect psychological well-being. The review develops an integrated conceptual framework illustrating both the enabling and inhibiting mechanisms through which AI influences employee performance. The study also identifies research gaps and proposes future research directions focusing on responsible AI adoption, employee resilience, organizational culture, and human-AI collaboration.

Keywords: Artificial Intelligence, Employee Performance, Human Resource Management, AI Adoption, Human-AI Collaboration, Technostress, Organizational Performance, Systematic Literature Review

1.Introduction

Artificial Intelligence has emerged as one of the most disruptive technologies influencing organizational performance and workforce dynamics. Advances in machine learning, natural language processing, robotics, predictive analytics, and generative AI have enabled organizations to automate routine tasks while augmenting human decision-making. Industries including banking, healthcare, manufacturing, education, retail, logistics, tourism, and information technology increasingly integrate AI into daily operations.

Unlike previous technological revolutions, AI does not merely automate physical labor but also performs cognitive tasks traditionally requiring human intelligence. Consequently, employees experience both opportunities and challenges. AI can improve productivity, efficiency, accuracy, creativity, and customer service. Simultaneously,

concerns regarding employee displacement, reduced autonomy, ethical dilemmas, surveillance, privacy, and psychological stress have intensified.

Current literature presents inconsistent findings. While some studies report significant improvements in employee productivity and innovation, others highlight adverse effects such as burnout, algorithmic control, resistance to change, and diminished job satisfaction. This inconsistency necessitates a comprehensive synthesis of existing evidence.

Accordingly, this study systematically reviews recent literature to examine AI's dual impact on employee performance and identify emerging research trends.

Research Objectives

1. To examine current research on AI and employee performance.
2. To identify positive impacts of AI on employee performance.
3. To identify negative consequences associated with AI implementation.
4. To develop a conceptual framework explaining AI's dual effects.
5. To identify research gaps and future research directions.

Research Questions

RQ1: How does Artificial Intelligence influence employee performance?

RQ2: What positive outcomes of AI adoption have been reported?

RQ3: What negative consequences emerge from AI implementation?

RQ4: What theoretical perspectives dominate existing literature?

RQ5: What future research opportunities exist?

2. Methodology

Research Design

This study adopts a qualitative research approach by employing a **Systematic Literature Review (SLR)** to examine the impact of artificial intelligence (AI) on employee performance across various industries. The review is based exclusively on peer-reviewed literature retrieved from the **Scopus** database, ensuring the inclusion of high-quality and internationally recognized research.

The review process follows the **Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)** guidelines to ensure transparency, rigor, and replicability in the selection and screening of studies. A comprehensive

literature search was conducted using keywords including **"Artificial Intelligence," "Employee Performance," "Impact of AI," "Positive Impact,"** and **"Negative Impact."** Relevant studies were identified through predefined inclusion and exclusion criteria, followed by a systematic screening and eligibility assessment.

The SLR process comprised four major stages: **(1) formulation of the research question, (2) development of the review protocol and search strategy, (3) systematic screening and quality assessment of the selected studies, and (4) descriptive synthesis and analysis of the findings.** This structured methodology provides a comprehensive understanding of both the positive and negative effects of AI on employee performance across different organizational contexts.

3. Literature Review

The Effect of Artificial Intelligence on Employee Performance Artificial Intelligence (AI) in this context refers to technologies that are capable of mimicking human intelligence to perform various tasks, such as data analysis, decision-making, process automation, and natural language-based interactions (S. J. Shaikh, 2023). In the work environment, AI plays an important role in supporting or replacing routine tasks, providing deeper insights through analysis, and driving business innovation (Burström et al., 2021). On the other hand, employee performance describes the level of success of individuals in completing the tasks and responsibilities given by the organization, which is assessed based on productivity, work quality, efficiency, innovation, and adaptability (Retnowati & Darma, 2024; Vuong & Nguyen, 2022). In the application of AI, the success of employee performance is not only determined by the completion of tasks with the help of technology (Narayanamurthy & Tortorella, 2021), but also by the extent to which the technology can be effectively utilized to improve work results and create added value for the organization (Maddikunta et al., 2022). The arrival of AI encourages employees to develop innovative thinking and more advanced human-machine collaboration skills (Downes et al., 2021; Kong et al., 2023). These skills are required to handle increasingly complex tasks while maintaining a competitive edge in collaborative work environments. Thus, efforts to improve employee well-being and work performance are not only a must for organizations in adjusting to technological changes, but also an important element for employee career development (Park et al., 2021). The use of AI in organizational management has therefore become a significant concern in recent studies (Harju et al., 2021; Pei et al., 2024; Tong et al., 2021). However, previous studies often explain the impact of AI either from the perspective of productivity improvement or from the risks associated with technological change. This study adopts the concept of AI impact duality, which views AI as simultaneously creating opportunities and challenges for employees. To explain this duality, this research integrates several theoretical perspectives that help understand how employees perceive, interact with, and respond to AI technologies in the workplace.

The Technology Acceptance Model (TAM) Perceived utility and ease of use are important factors in determining technology acceptability, according to Davis (1989), the Technology Acceptability Model (TAM). In AI adoption, these perceptions are often influenced by the level of technological literacy, training provided, and organizational

communication about the long-term benefits of AI (Brougham & Haar, 2018). In addition, successful AI adoption is also influenced by the extent to which organizations can integrate this technology with existing work processes without creating significant barriers for employees (Soomro et al., 2024). In the context of AI impact duality, TAM explains that when employees perceive AI as useful and easy to use, they are more likely to accept and utilize the technology, which can improve work efficiency and performance. Conversely, negative perceptions of AI may lead to resistance that hinders performance.

Task Technology Fit Theory In the context of technology adoption, employee performance is frequently impacted by several factors, such as organizational support, perceived technological benefits, and flexibility (Gibson et al., 2022). According to Goodhue & Thompson (1995), Task Technology Fit Theory, the degree to which technology facilitates employee tasks has a significant impact on the success rate of technology adoption. Although technological assistance for task completion is frequently seen favorably in the context of AI, the requirement for relearning and personalization may have an impact on worker productivity and motivation (Trenerry et al., 2021). In the context of AI, TTF explains that AI technologies can enhance performance when their capabilities align with job requirements. However, when AI systems are poorly aligned with employee tasks or require significant adjustments, they may reduce productivity and motivation.

Artificial Intelligence in Organizations

AI encompasses technologies capable of simulating human intelligence through learning, reasoning, perception, and decision-making. Organizations increasingly deploy AI across recruitment, performance appraisal, customer relationship management, knowledge management, and predictive analytics.

Recent advancements in Generative AI have further expanded AI applications, enabling content generation, coding assistance, decision support, and workflow automation.

Positive Impact of AI on Employee Performance

Automation of Routine Tasks

AI reduces repetitive work, allowing employees to focus on strategic and creative activities.

Reported benefits:

- Higher productivity
- Reduced workload
- Faster task completion
- Better accuracy

Better Decision Making

AI provides predictive analytics and real-time insights.

Benefits include:

- Improved decision quality
- Faster responses
- Reduced human errors

Personalized Learning

AI-powered learning systems recommend customized training.

Benefits:

- Skill enhancement
- Continuous learning
- Higher adaptability

Innovation

Employees using AI tools demonstrate greater creativity by automating routine work and dedicating more time to problem-solving.

Human-AI Collaboration

Collaborative intelligence combines human judgment with AI computational capabilities, leading to superior performance.

Negative Impact of AI

Job Insecurity

Employees fear automation replacing their roles.

Effects include:

- Lower commitment
- Increased turnover intentions
- Resistance to AI

Technostress

Continuous interaction with AI systems creates:

- Mental fatigue
- Cognitive overload
- Burnout

Algorithmic Bias

AI may produce discriminatory decisions affecting:

- Recruitment
- Promotions
- Performance appraisal

Employee Surveillance

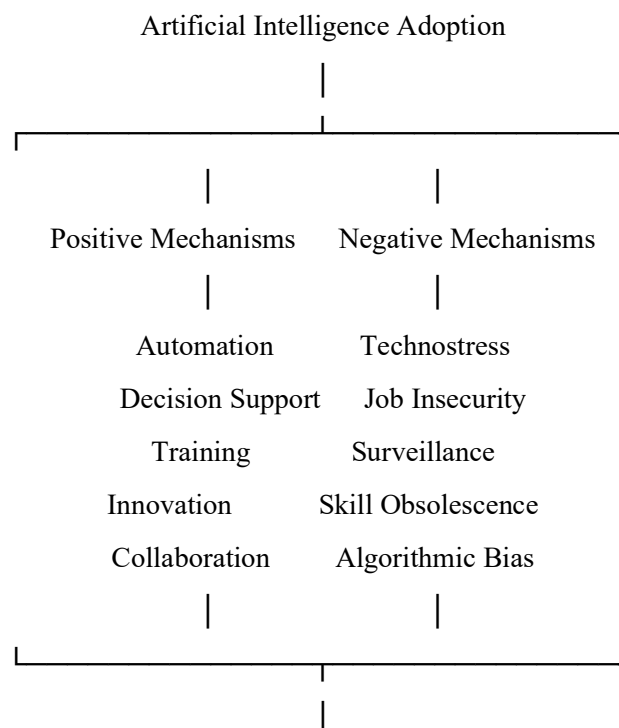
AI-enabled monitoring systems reduce perceived autonomy.

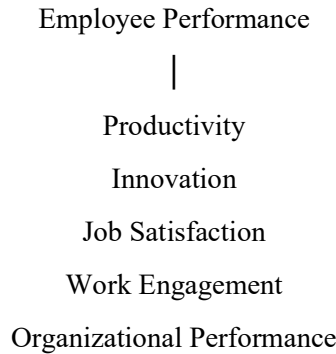
Consequences include:

- Lower motivation
- Reduced trust
- Higher anxiety

Skill Obsolescence

Employees lacking digital competencies struggle to adapt.





4. Conclusion

The findings of this systematic literature review reveal that the adoption of Artificial Intelligence (AI) has a **dual impact** on employee performance, generating both significant benefits and notable challenges. On the positive side, AI enhances employee productivity, improves job engagement, fosters psychological empowerment, facilitates knowledge sharing, and encourages continuous learning and upskilling. Employee-related factors such as tenure, digital competencies, and AI readiness, along with organizational factors including authentic leadership, change-oriented leadership, and supportive management, play a crucial role in maximizing AI's positive influence on performance.

However, the review also identifies several barriers that may negatively affect employee performance and AI adoption. These include technostress, workplace and technology-related anxiety, the disclosure effect that reduces employee trust, fear of job displacement, and job insecurity. Such psychological and organizational challenges can reduce employees' willingness to embrace AI technologies, thereby limiting their potential benefits.

From a theoretical perspective, this study contributes to the existing literature by integrating and synthesizing empirical evidence on the multifaceted relationship between AI and employee performance. It highlights that AI influences employee outcomes through technological, organizational, and psychological mechanisms rather than acting as a purely technological intervention.

From a practical standpoint, the findings suggest that organizations should adopt a human-centered AI implementation strategy by investing in employee training, continuous upskilling, psychological empowerment, supportive leadership, and trust-building initiatives. Such measures can enhance employees' acceptance of AI, mitigate technostress and technology-related anxiety, and ultimately improve organizational performance.

Future research should explore the mediating and moderating roles of psychological factors, organizational digital culture, AI trust, and leadership styles in shaping AI adoption and employee performance. In addition, longitudinal and cross-industry studies are recommended to provide deeper insights into the long-term effects of AI implementation across diverse organizational settings.

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