



The Role of Artificial Intelligence in Reducing Workplace Stress and Enhancing Work-Life Balance: An Empirical Study

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ABSTRACT:

Employee stress has become a critical challenge for modern organizations, often leading to lower productivity, frequent absenteeism, and difficulties in maintaining work-life balance. In recent years, Artificial Intelligence (AI) has been increasingly integrated into organizational processes to automate routine tasks, improve operational efficiency, and promote employee well-being. This study examines the impact of AI on reducing workplace stress and promoting work-life balance among Indian employees. Data were gathered from 250 respondents employed in the IT, banking, and healthcare sectors through a structured survey. The analysis involved descriptive statistics, correlation, and regression techniques to explore the relationship between AI usage, stress reduction, and the balance between work and personal life. Results show that AI helps minimize repetitive activities, enhances time management, and strengthens overall work-life integration. At the same time, concerns related to employee privacy and potential job displacement emerged as notable challenges. The study concludes with practical recommendations for managers, HR professionals, and policymakers to implement AI in a responsible and employee-centered manne.

Keywords: Artificial Intelligence, workplace stress, work-life balance, employee well-being, HR technology.

1. INTRODUCTION:

Stress in the workplace has become a universal challenge, undermining employee health, diminishing productivity, and lowering overall job satisfaction. In India, this problem has intensified due to the fast pace

of digitalization, rising performance demands, and the culture of long working hours across industries (Kumar & Sharma, 2023). When employees remain under constant pressure, the consequences extend beyond personal health concerns to higher turnover rates and declining organizational effectiveness.

Equally critical is the issue of work-life balance — the delicate alignment between professional obligations and personal well-being. In today's hyperconnected environment, employees often find it difficult to disconnect from work, leading to burnout, emotional fatigue, and strained relationships at home (Mishra & Patel, 2022).

Amid these challenges, Artificial Intelligence (AI) has emerged as a powerful disruptor with the potential to reshape workplace dynamics. Tools such as AI-driven chatbots, automated scheduling systems, wellness applications, and advanced HR analytics are increasingly adopted to reduce manual effort, personalize employee support, and improve engagement (Gupta, 2024). Yet, despite its promise, the real impact of AI on alleviating workplace stress and fostering healthier work-life balance remains insufficiently studied, particularly within the Indian context.

2. Objectives of the Study:

- To examine how Artificial Intelligence (AI) adoption influences the reduction of workplace stress among employees.
- To investigate the contribution of AI tools in promoting and sustaining work-life balance.
- To propose actionable strategies and recommendations for organizations and HR professionals to implement AI in an ethical and employee-centric manner.

3. Literature Review:

3.1 Workplace Stress

Workplace stress commonly arises from factors such as excessive workload, extended working hours, unclear job roles, and inadequate organizational support (Cooper & Quick, 2022). In the Indian scenario, rapid industrial expansion and the pace of digital transformation have intensified these pressures, resulting in heightened psychological strain on employees (Kumar & Sharma, 2023). Prolonged exposure to such stress has been strongly associated with lower motivation, declining job satisfaction, and elevated turnover rates.

3.2 Work-Life Balance

Achieving work-life balance has become a growing challenge in the digital age. The blending of professional and personal boundaries, particularly due to remote work arrangements and constant digital connectivity, has made it difficult for employees to disconnect from their professional roles (Chaudhary, 2023). Organizations that overlook this concern often experience higher instances of employee burnout and decreased overall productivity (Mishra & Patel, 2022).

3.3 Artificial Intelligence in the Workplace

AI applications are increasingly being integrated into human resource management and organizational practices, including recruitment, scheduling, performance monitoring, and employee support systems. By automating repetitive activities, AI enables employees to shift their focus toward more creative and strategic tasks, thereby reducing role-related stress (Gupta, 2024).

3.4 AI and Stress Reduction

AI-powered tools, such as project management platforms and conversational chatbots, help employees manage responsibilities more efficiently. Empirical evidence suggests that AI adoption minimizes cognitive overload and decreases stress stemming from heavy workloads (Sharma & Mehta, 2023). However, researchers also warn that excessive reliance on AI surveillance may heighten stress levels by fostering feelings of constant monitoring and reduced autonomy.

3.5 AI and Work-Life Balance

AI contributes to healthier work-life integration by supporting flexible scheduling, remote collaboration, and time management. Moreover, AI-enabled wellness applications offer features such as guided meditation, reminders, and health-tracking functions, all of which promote better personal well-being (Singh, 2025). Nonetheless, challenges concerning data privacy and overdependence on digital tools highlight the need for cautious implementation (Rao, 2024).

4. Research Gap:

Although global literature emphasizes the potential of AI in fostering employee well-being, empirical studies focusing on its direct influence on workplace stress and work-life balance in India remain scarce. This study addresses this gap by applying a quantitative research approach to examine these relationships.

5. Research Methodology:

5.1 Research Design:

The present study employs a descriptive and empirical research design to investigate the relationship between AI adoption, workplace stress, and work-life balance. Data were collected through both online and offline surveys using a structured questionnaire.

5.2 Sample:

- **Population:** Employees from the IT, banking, and healthcare sectors in India.
- **Sample Size:** 250 respondents.
- **Sampling Technique:** Stratified random sampling was adopted to ensure balanced representation across the three industries.

5.2 Data Collection Tool:

The survey instrument comprised five sections: demographic profile, AI adoption, workplace stress, work-life balance, and overall perceptions. Most items were measured using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

5.3 Reliability and Validity:

- **Reliability:** The scale demonstrated high internal consistency, with a Cronbach's alpha value of 0.87.
- **Validity:** Content validity was ensured through expert review by three academicians specializing in Human Resource Management and Artificial Intelligence.

5.4 Data Analysis:

The collected data were analysed using SPSS 25.0. Descriptive statistics were applied to summarize responses, Pearson correlation was used to identify relationships among variables, and multiple regression analysis assessed the predictive effect of AI adoption on stress reduction and work-life balance.

6. Results and Discussion:

Table 1: Descriptive Statistics (N = 250)

Variable	Mean	Std. Deviation
AI Adoption	3.92	0.81
Workplace Stress	2.74	0.95
Work-Life Balance	3.88	0.76

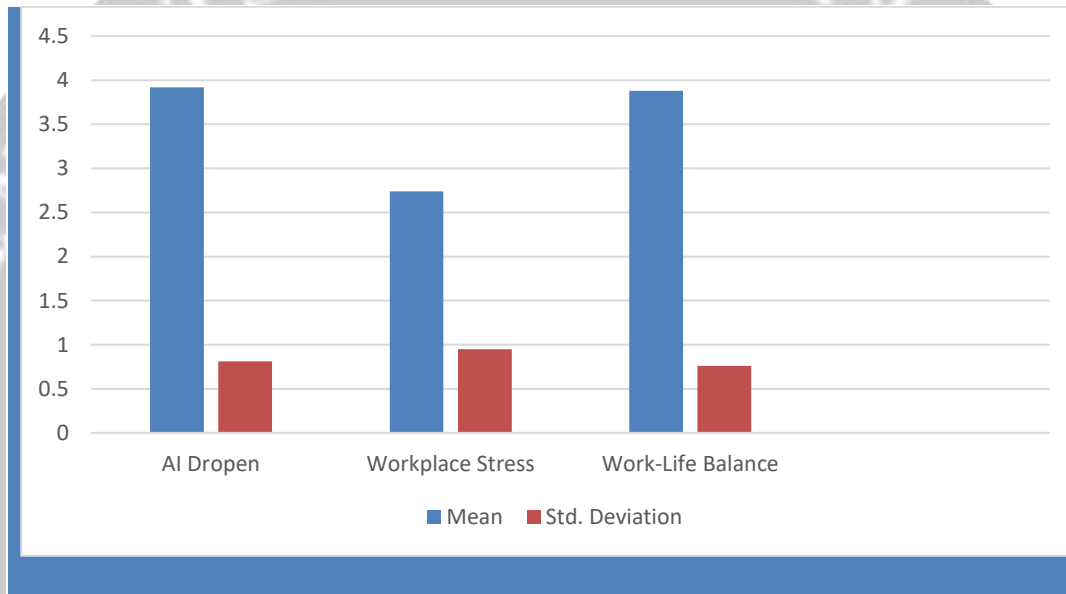


Chart-1

Interpretation: Employees moderately agreed on AI adoption in their workplaces. Stress levels were below the mid-point, suggesting AI contributed to reducing pressure. Work-life balance ratings were relatively high.

Table 2: Correlation Analysis

Variables	AI Adoption	Stress	Work-Life Balance
AI Adoption	1	-0.62**	0.55**
Stress	-0.62**	1	-0.48**
Work-Life Balance	0.55**	-0.48**	1

Note: $p < 0.01$

Interpretation: AI adoption was significantly negatively correlated with stress and positively correlated with work-life balance.

Table 3: Regression Analysis (Dependent Variables: Stress, Work-Life Balance)

Predictor	B	t	p-value
AI Adoption → Stress	-0.47	-8.21	0.000**
AI Adoption → Work-Life Balance	0.42	7.65	0.000**

Interpretation: AI adoption significantly predicts reduced stress and enhanced work-life balance.

Discussion

The results of the study indicate that the integration of AI significantly alleviates workload-related stress by automating routine tasks and supporting more effective time management. These findings are consistent with Sharma and Mehta (2023), who reported that AI adoption helps minimize technostress and reduces employee strain. Likewise, Singh (2025) emphasized the positive influence of AI-enabled flexibility in promoting work-life balance, a conclusion that resonates with the outcomes of this research. Despite these benefits, the study also revealed employee apprehensions regarding issues of data privacy and potential job insecurity, concerns that align with the observations of Rao (2024) and were frequently expressed in the open-ended responses.

7. Conclusion:

This empirical investigation highlights the significant role of Artificial Intelligence in promoting employee well-being. The findings reveal that AI adoption not only reduces workplace stress by automating repetitive and time-consuming tasks but also facilitates greater flexibility, thereby supporting a healthier work-life balance. Employees who utilized AI-driven tools reported lower stress levels, improved time management, and enhanced integration of professional and personal responsibilities.

At the same time, the study underscores the importance of responsible AI implementation. While the benefits are evident, concerns regarding data privacy, constant monitoring, and potential job insecurity remain pressing challenges. For organizations, this implies that the introduction of AI should be accompanied by transparent policies, ethical practices, and adequate employee support systems.

Overall, the study contributes to the growing body of literature by providing empirical evidence from the Indian context. It suggests that, when implemented thoughtfully, AI can serve as a powerful enabler of employee well-being, reducing stress and strengthening work-life integration. However, sustainable outcomes will require a balanced approach that maximizes efficiency while protecting the rights and trust of employees.

8. Suggestions / Recommendations:

1. **For Organizations:** Integrate AI tools that reduce workload but avoid excessive surveillance.
2. **For HR Professionals:** Use AI-driven analytics to identify stress trends and intervene early.
3. **For Policymakers:** Develop frameworks for ethical AI adoption, focusing on employee well-being.
4. **For Future Research:** Explore qualitative insights and industry-specific AI applications.

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Appendix A: Questionnaire

Instructions: Please indicate your level of agreement with the following statements (1 = Strongly Disagree to 5 = Strongly Agree).

Section A: Demographic Information

1. Gender ☐ Male ☐ Female ☐ Other
2. Age Group ☐ 20-30 ☐ 31-40 ☐ 41-50 ☐ 51+
3. Industry ☐ IT ☐ Banking ☐ Healthcare ☐ Other _____
4. Years of Experience ☐ 0-5 ☐ 6-10 ☐ 11-15 ☐ 16+
5. Work Mode ☐ Office ☐ Remote ☐ Hybrid

Section B: AI Adoption

1. AI tools are widely used in my organization.
2. AI helps me complete tasks more efficiently.
3. AI reduces repetitive and time-consuming work.
4. My organization provides training for AI use.
5. I feel confident using AI tools at work.

Section C: Workplace Stress

1. I often feel overwhelmed by my workload.
2. AI tools reduce my workload stress.
3. I feel less anxious with AI support.
4. AI helps me manage deadlines better.
5. AI reduces mistakes that would otherwise cause stress.

Section D: Work-Life Balance

1. AI scheduling tools help me balance work and personal life.
2. AI allows me more flexibility in managing time.
3. AI reduces overtime and enables family/personal time.
4. AI wellness apps support my mental health.
5. AI positively impacts my work-life balance.

Section E: Overall Perceptions

1. AI improves my job satisfaction.

2. AI has a positive impact on employee well-being.
3. Ethical use of AI is essential for trust.

Open-Ended Questions

1. What benefits of AI have you experienced in reducing stress?
2. What concerns do you have about AI in your workplace?

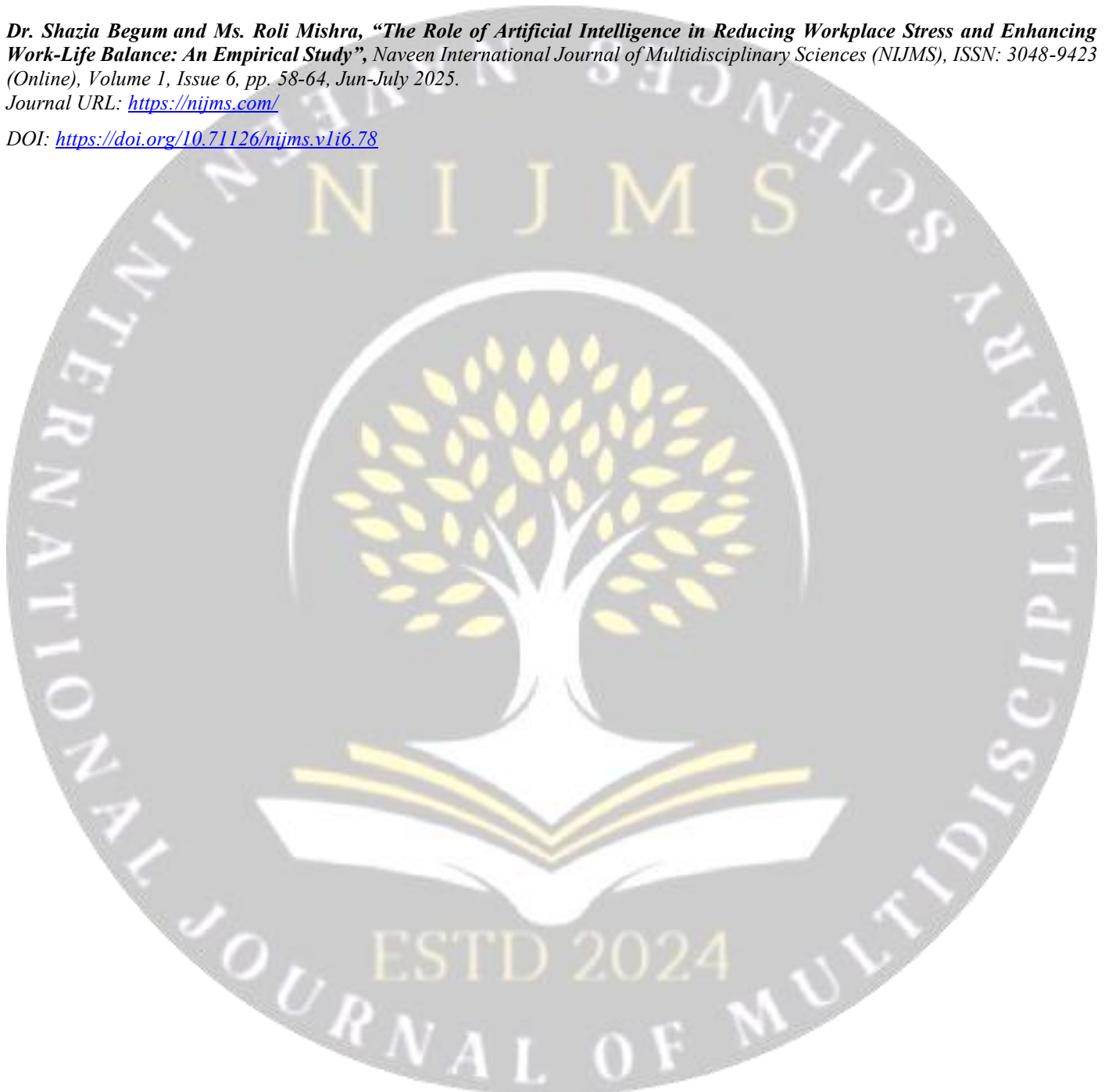
How can organizations use AI more effectively to support work-life balance?

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