



An Overview of the Relationship between Digital Stress, Technostress, and Employee Mental Health in the Era of Artificial Intelligence

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ABSTRACT

In the rapidly evolving landscape of the Fourth Industrial Revolution, the rapid integration of artificial intelligence (AI), automation, and digital technologies into organizational systems has significantly transformed the nature of work. While these advancements improve productivity, efficiency, and innovation, they also generate new psychological demands on employees. Concepts such as digital stress and technostress have emerged to explain stress arising from technology use, digital overload, automation-related anxiety, and continuous connectivity. This review article synthesizes existing literature on technostress, digital stressors, and their implications for employee mental health in AI-enabled workplaces. The results show that digital technology at work can make employees handle many tasks at the same time, feel unsure about their jobs, and have less control over how they do their work. This can negatively affect their mental health. This study also revealed that employees who viewed AI negatively, it increases job insecurity or found tasks more complicated, tended to experience higher levels of stress. On the other hand, those who adjust well to AI technologies reported better work–life balance and lower stress levels.

This research has important implications for advancing industrial–organizational psychology theory and improving human resource management practices, especially in creating healthier workplaces during the ongoing digital transformation.

Keyword: Artificial Intelligence, Digital Stress, Technostress, Employee Mental Health.

1. INTRODUCTION

The Fourth Industrial Revolution, characterized by artificial intelligence (AI), machine learning, robotics, and digital automation, has fundamentally altered the structure and functioning of modern workplaces. Organizations increasingly rely on digital platforms, algorithmic management systems, and AI-driven decision-making processes to enhance competitiveness and efficiency. However, alongside these benefits, scholars and practitioners have identified significant psychological costs associated with continuous technological integration.

Artificial Intelligence

Artificial Intelligence (AI) is the capability of machines or computer systems to carry out tasks that normally require human intelligence. These tasks include learning, reasoning, problem-solving, decision-making, language understanding, and pattern recognition. AI is the study and design of intelligent agents that perceive their environment and take actions to maximize the achievement of goals (Russell and Norvig, 2010). McCarthy (2007), one of the founders of AI, defined AI as the science and engineering of making intelligent machines, especially intelligent computer programs.

Technostress

The concept of technostress was first introduced by Brod (1984), who defined it as the inability to cope with new computer technologies healthily. Ayyagari, Grover & Purvis (2011) refined the concept by identifying specific stress creators associated with information and communication technologies (ICTs).

Tarafdar et al. (2007) proposed five primary “technostress creators”

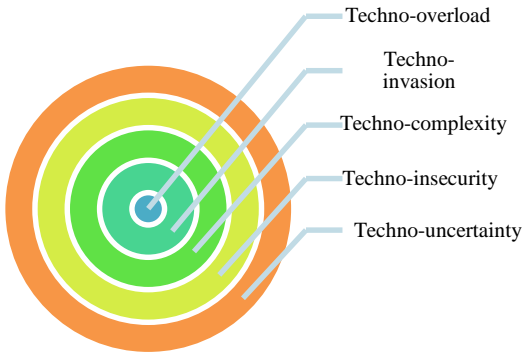


Figure 1: Five primary “technostress creators”
Source: Author Compiled

- Techno-overload: Technology increases work pace and workload.
- Techno-invasion: Technology blurs boundaries between work and personal life.
- Techno-complexity: Difficulty in understanding and using new systems
- Techno-insecurity: Fear of job loss due to technological advancements.
- Techno-uncertainty: Constant updates and changes in digital systems.

These dimensions provide a comprehensive framework for examining employee stress in technology-driven organizations.

Digital Stress

Digital stress refers to the psychological strain and emotional discomfort experienced due to excessive or problematic use of digital technologies such as smartphones, computers, AI-based systems, social media platforms, and workplace digital tools. It emerges when individuals perceive that digital demands exceed their coping resources (Ragunathan et al., 2008; Ayyagari, Grover, & Purvis, 2011).

Digital stress is closely related to technostress, but it is broader in scope. While technostress traditionally focuses on workplace ICT stress, digital stress includes stress arising from:

- Continuous connectivity
- Information overload
- Social media pressure
- AI-based monitoring systems
- Remote work technologies
- Automation anxiety

Digital stress extends beyond traditional ICT stressors to include pressures arising from AI-based monitoring, algorithmic decision-making, performance tracking systems, and remote collaboration tools. Employees often report feeling surveilled, evaluated by opaque algorithms, and compelled to maintain perpetual availability through digital platforms.

Digital stress and technostress have become central constructs in understanding how employees experience and respond to rapid technological change. As work environments become increasingly automated and data-driven, employees face heightened expectations for constant connectivity, digital competence, and performance acceleration. These demands pose substantial challenges to employee mental health and human capital sustainability.

Current study

This systematic review examined the relationship between a Digital Stress, Technostress, and Employee Mental Health in the Era of AI. This study helps to understand the importance of artificial intelligence and how artificial intelligence can be helpful reduce digital stress and technostress for employee. Also, this study helps to understand what is the effect of artificial intelligence on mental health of the employee.

Methods

Eligibility criteria

For inclusion in this review, studies fulfilled the following eligibility criteria:

- Variables: The study selected with following variables artificial intelligence, digital stress, technostress, and mental health
- Studies Published in peer-reviewed journals with full text available in English
- Studies published in recent 10 years
- Quantitative, qualitative, and mixed methods

Search strategy

Standardized systematic search strategies facilitate rigor in research. PICO (Population, Intervention, Comparison, and Outcome) formulation focuses on the retrieval of quantitative research.

Data extraction

All studies identified through the database searches that met the eligibility criteria were included. The collected data covered the authors, publication year, study design, data analysis methods, key outcome measures, sample size, demographic characteristics, and main results. Based on the relevant outcomes of these studies, conclusions were drawn.

Description of studies here is the expanded table including details from all 8 studies:

S. No.	Authors	Title	Aim	Design	Sample Size	Finding/ Result
1	Bernburg et al. (2024)	Digital stressors and resources perceived by emergency physicians and associations to their digital stress perception, mental health, job satisfaction and work engagement	To identify digital stressors and resources among emergency physicians and examine their association with mental health and work outcomes	Quantitative cross-sectional	204 emergency physicians	Moderate technostress levels were found. Digital stressors were significantly associated with exhaustion and mental strain, while digital

						resources were linked to higher work engagement and job satisfaction.
2	Kräfte et al. (2024)	Digital stress perception among German hospital nurses and associations with health-oriented leadership, emotional exhaustion and work-privacy conflict	To examine the relationship between technostress, leadership, and health outcomes among nurses	Cross-sectional	243 nurses	Techno-invasion significantly increased emotional exhaustion and work-privacy conflict. Health-oriented leadership acted as a protective factor and reduced stress impact.
3	Würtenberger et al. (2025)	Digital stress perception and associations with work- and health-related outcomes among general practitioners in Germany	To analyze technostress among general practitioners and its effects on burnout, job satisfaction, and health	Mixed-method quantitative study	114 general practitioners	Moderate technostress levels were reported. Higher technostress was linked to increased burnout symptoms and reduced job satisfaction. Preventive strategies were recommended.
4	Di Stefano et al. (2025)	Artificial Intelligence Perceptions and	To examine how AI perceptions influence	Cross-sectional	71 radiologists	Negative AI perceptions

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		Technostress in Staff Radiologists: The Mediating Role of AI Acceptance and the Moderating Role of Self-Efficacy	technostress and the mediating role of AI acceptance			increased technostress. AI acceptance reduced technostress. Self-efficacy moderated the relationship. Acceptance acted as a buffering mechanism.
5	Liu et al. (2025)	Exploring the impact of AI technostress on physicians' job insecurity and performance	To examine AI-related technostress, job insecurity, and performance among physicians	survey	400 physicians	AI self-esteem threat was the strongest technostressor. Job insecurity reduced job satisfaction but unexpectedly increased job performance as a motivational response.
6	Lee et al. (2026)	Mediating effect of technostress on the relationship between AI literacy and attitude toward digital technology among health profession students	To examine the effect of AI literacy on digital attitudes and the mediating role of technostress	Cross-sectional	1,314 students	Higher AI literacy reduced technostress and improved attitudes toward digital technology. Technostress partially mediated

						the relationship.
7	Jin et al. (2026)	Understanding AI Technostress and Employee Career Growth from a Socio-Technical Systems Perspective: A Dual-Path Model	To explore challenge vs. hindrance AI technostress and its impact on career growth	Two-stage survey design	326 matched pairs	Challenge-related technostress promoted skill development and career growth, while hindrance-related technostress increased anxiety and hindered growth. Organizational support moderated effects.
8	Sinha & Sharma (2025)	AI and the Perception of Workplace Stress in Employees	To investigate how AI integration influences workplace stress perception	Mixed-methods (quantitative + qualitative survey)	60 professionals	Negative AI perceptions (job insecurity, task complexity) were associated with higher stress. Employees who adapted well to AI reported better work-life balance and lower stress.
9	Lițan (2025)	Mental health in the “era” of artificial intelligence:	To analyze the relationship between AI-related	Cross-sectional	Romani an adult population (sample	AI-related technostress is positively associated

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		technostress and the perceived impact on anxiety and depressive disorders—an SEM analysis	technostress and anxiety/depression symptoms		size not specified in excerpt)	with anxiety and depression symptoms
10	Zhang, S., Guo, P., Yuan, Y., & Ji, Y. (2025).	Anxiety or engaged? Research on the impact of technostress on employees' innovative behaviour in the era of artificial intelligence	To investigate how technostress influences employees' innovative behaviour in AI-driven workplaces	Empirical quantitative study	Not specified in excerpt	Technostress significantly affects employees' innovative behaviour, influencing workplace performance dynamics.
11	Kumar (2024)	TECHNOSTRESS: A comprehensive literature review on dimensions, impacts, and management strategies	To systematically review technostress research and identify dimensions, impacts, and interventions	Systematic literature review	46 studies (2007–2023)	Identifies psychological, physiological, emotional, and work-life balance impacts of technostress. Highlights the need for targeted organizational interventions.
12	Dragano & Lunau (2020)	Technostress at work and mental health: concepts and research results	To examine the concept of technostress and its relationship with mental health	Narrative review	Not applicable	Technostress is associated with psychosocial demands and stress reactions; potential links to

						depression and burnout, though causal evidence is limited.
13	Ayyagari , Grover & Purvis (2011)	Technostress : Technological Antecedents and Implications	To examine technological antecedents of technostress and its implications on strain	Quantitative survey study	Working adult ICT users	ICT-related overload, role ambiguity , and work-home conflict significantly increase strain and burnout.
14	Akbar et al. (2025)	Workplace Stress in the Era of Digital Transformation: A Psychological Approach to Employee Well-Being	To analyze psychological mechanisms linking digital transformation and employee well-being	Qualitative literature review (2020–2025)	N/A	Digital transformation increases technostress, cognitive overload, digital presenteeism, and work-life imbalance ; organizational support and digital literacy reduce strain.

Table 1: Description of studies
Source: Author Compiled

Analysis of result

Result classified into four common domains: the relationship between Artificial intelligence and the mental health of employees, the relationship between Technostress and the mental health of employees, the relationship between Digital stress and the mental health of employees, and the relationship between Artificial intelligence and the mental health of employees.

Artificial intelligence, digital stress and technostress:

AI-related challenge stressors encourage proactive adaptation and the development of new skills. In contrast, AI-related hindrance stressors create anxiety and insecurity, which can limit personal and professional growth (Jin, Yang, and Zhang 2026). Another study indicates that anxiety and depression symptoms are significantly associated with AI-related technostress. (Lițan, 2025) On the other hand, some studies suggested that higher levels of AI literacy were linked to lower technostress, which subsequently contributed to more positive attitudes toward digital technology (Lee, Min, Yim, Park, and Yune, 2026). A survey done by Liu, Lin, and Ko, (2026), the finding indicating that The findings show that AI-related threats to self-esteem are a major source of technostress, and while job insecurity reduces job satisfaction, it may also motivate employees to work harder and improve their performance. Another finding of some studies suggests that perceptions of AI create both direct work pressures and indirect stress-reducing effects through acceptance, so organizations should promote acceptance, develop employee skills, and improve workload management and clarity. (Di Stefano et. al., 2025).

Artificial intelligence and the mental health of employees:

The fast adoption of Artificial Intelligence (AI) in workplaces has greatly changed employee roles and how organizations operate. Although AI can improve productivity and reduce workload, it also raises concerns about job security, more complex tasks, maintaining work–life balance, and adapting to new technologies. Some previous studies showed that employees who had negative views about AI, such as feeling that it threatens their job security or makes their work more complicated, tended to experience greater stress (Sinha and Sharma, 2025). The underlying causes of such disorders can be examined through existing research. AI-driven changes impact all sectors and often lead to psychological reactions such as denial, shock, frustration, and anger (Lițan 2025). In contrast, those who successfully adapted to AI technologies reported better work–life balance and lower levels of stress (Sinha and Sharma, 2025).

Technostress and the mental health of employees:

Research that directly examines the link between technostressors and mental health is limited. Among the few available studies, most have

concentrated on the relationship between ICT use and burnout (Maslach, Schaufeli and Leiter, 2001). Those cross-sectional studies and also one intervention study found positive associations between technostress and burnout (Brown, Duck, and Jimmieson, 2014). A longitudinal study suggest that high information and communication technology (ICT) demands such as frequent emails, constant interruptions, and pressure from flexible working conditions can lead to cognitive complaints over time. Digital work pressures themselves play an important role in affecting employees' mental functioning and well-being (Stenfors, 2013). The impact of technostress on employees' innovative behavior depends on how they interpret it. When technostress is seen as a hindrance, it increases job anxiety and reduces innovation. However, when it is viewed as a challenge, it boosts work engagement and encourages innovative behavior (Zhang, Guo, Yuan, and Ji, 2025).

Digital stress and mental health of employee:

The presence of technostress and exhaustion suggests that ongoing digital pressures can still impact psychological well-being. This supports the idea that digital stress plays an important role in mental health concerns in modern workplaces. There are some studies found moderate levels of technostress, which shows that digital demands are a noticeable source of stress for employees. Physicians also reported moderate exhaustion, which is a common sign of mental strain and burnout. The significant associations between digital stressors and health-related outcomes indicate that higher digital stress is connected to negative mental health effects (Bernburg, Tell, Groneberg, and Mache, 2024; Kräft, Wirth, Harth, and Mache, 2024). Another study revealed that Physicians and nurses who frequently use digital technologies tend to report higher levels of technostress and lower digital competence compared to professionals in other fields. In contrast, healthcare professionals who have less interaction with digital technologies may overestimate their digital skills (Golz et. al., 2021). The findings show that digitalization increases multitasking demands, creates greater job uncertainty, and reduces employees' sense of control over their work, which ultimately harms their psychological well-being (Akbar, Varias, Risa, Bhirawa, and Nugraha, 2025).

Discussion:

This systematic review looked at the evidence indicating a possible link between artificial intelligence, digital stress, technostress and mental health. The present study included 14 studies, such as cross-sectional,

empirical, survey, and review articles. There is evidence of rapid integration of Artificial Intelligence (AI) in the workplace has significantly transformed employee roles and the way organization's function. Perception of AI is a threat, like worrying it might replace their job or make their work harder, usually feel more stressed. But people who learn to use AI and adjust to it feel less stressed and have a better balance between work and personal life (Sinha and Sharma, 2025). There is a significant relationship between artificial intelligence and technostress in organization (Silvestre, Romanelli, and Ferrara, 2024). Other findings revealed that using information and communication technologies can lead to heightened stress, increased burnout symptoms, and reduced job satisfaction (Würtenberger, Groneberg, and Mache, 2025).

Conclusion

The integration of AI and automation is reshaping organizational landscapes, offering unprecedented opportunities for efficiency and innovation. However, this transformation also generates significant psychological demands on employees. Digital stress and technostress are emerging as critical concerns affecting mental health, productivity, and human capital sustainability. Perceptions of AI have both direct effects similar to job demands and indirect effects through acceptance. Therefore, successful implementation should focus on promoting acceptance, enhancing competence, and improving workload management and organizational clarity. A balanced approach to digital transformation, one that integrates technological advancement with employee well-being, remains essential. Organizations and policymakers must recognize that sustainable progress in the era of AI depends not only on technological infrastructure but also on resilient, supported, and psychologically healthy human capital. Artificial intelligence and digitalization of work present both benefits and risks for employees' mental health. However, existing research remains limited, and more studies are needed to better understand its positive and negative effects.

Research Gaps and Future Directions

Despite growing literature, several areas require further exploration:

- Longitudinal studies examining long-term mental health impacts of AI integration.

- Comparative studies between AI-intensive and non-AI workplaces.
- Context-specific research in developing economies.
- Intersectional analysis of gender, age, and socio-economic status in digital stress experiences

REFERENCE

- Akbar, M. A., Varias, V., Risa, T. D., Bhirawa, M. A., & Nugraha, R. (2025). Workplace stress in the era of digital transformation: A psychological approach to employee well-being. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 4(3), 3496–3506.
- Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly*, 35(4), 831–858.
- Bernburg, M., Tell, A., Groneberg, D. A., & Mache, S. (2024). Digital stressors and resources perceived by emergency physicians and associations with their digital stress perception, mental health, job satisfaction, and work engagement. *BMC Emergency Medicine*, 24(1), Article 31.
- Brod, C. (1984). *Technostress: The human cost of the computer revolution*. Addison-Wesley.
- Brown, R., Duck, J., & Jimmieson, N. (2014). E-mail in the workplace: The role of stress appraisals and normative response pressure in the relationship between e-mail stressors and employee strain. *International Journal of Stress Management*, 21(4), 325–347.
- Di Stefano, G., Salerno, S., Matranga, D., Lodico, M., Monzani, D., Seidita, V., & Miceli, S. (2025). Artificial intelligence perceptions and technostress in staff radiologists: The mediating role of artificial intelligence acceptance and the moderating role of self-efficacy. *Behavioral Sciences*, 15(9), Article 1276.
- Dragano, N., & Lunau, T. (2020). Technostress at work and mental health: Concepts and research results. *Current Opinion in Psychiatry*, 33(4), 407–413.
- Golz, C., Peter, K. A., Müller, T. J., Mutschler, J., Zwakhalen, S. M., & Hahn, S. (2021). Technostress and digital competence among health professionals in Swiss psychiatric hospitals: Cross-sectional study. *JMIR Mental Health*, 8(11), e31408.
- Jin, T., Yang, X., & Zhang, L. (2026). Understanding AI technostress and employee career growth from a socio-technical systems perspective: A dual-path model. *Systems*, 14(1), Article 58.
- Kräft, J., Wirth, T., Harth, V., & Mache, S. (2024). Digital stress perception among German hospital nurses and associations with health-oriented leadership, emotional exhaustion, and work-privacy conflict: A cross-sectional study. *BMC Nursing*, 23(1), Article 213.
- Kumar, P. S. (2024). Technostress: A comprehensive literature review on dimensions, impacts, and management strategies. *Computers in Human Behavior Reports*, 16, Article 100475.
- Lee, J. Y., Min, Y. H., Yim, J., Park, K. H., & Yune, S. J. (2026). Mediating effect of technostress on the relationship between artificial intelligence literacy and attitude toward digital technology among health profession students: A structural equation modeling approach. *Journal of Yeungnam Medical Science*, 43, Article 7.
- Liu, C. F., Lin, T. C., & Ko, Y. L. (2026). Exploring the impact of AI technostress on physicians' job insecurity and performance from an empirical multi-hospital study. *iScience*, 29(1).
- Liñan, D. E. (2025). Mental health in the “era” of artificial intelligence: Technostress and the perceived impact on anxiety and depressive disorders—An SEM analysis. *Frontiers in Psychology*, 16, Article 1600013. <https://doi.org/10.3389/fpsyg.2025.1600013>

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- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422.
- McCarthy, J. (2007). *What is artificial intelligence?*
- Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and validation. *Information Systems Research*, 19(4), 417–433. <https://doi.org/10.1287/isre.1070.0165>
- Russell, S. J., & Norvig, P. (2010). *Artificial intelligence: A modern approach* (3rd ed.). Pearson Education.
- Silvestre, R., Romanelli, M., & Ferrara, M. (2024). Understanding the relationship between artificial intelligence and technostress for organizations managing people with technology.
- Sinha, G., & Sharma, S. (2025). AI and the perception of workplace stress in employees. *International Journal of Indian Psychology*, 13(2).
- Stenfors, C. U., Magnusson Hanson, L., Oxenstierna, G., Theorell, T., & Nilsson, L. G. (2013). Psychosocial working conditions and cognitive complaints among Swedish employees. *PLOS ONE*, 8(4), e60637.
- Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems*, 24(1), 301–328. <https://doi.org/10.2753/MIS0742-1222240109>
- Württenberger, A., Groneberg, D. A., & Mache, S. (2025). Digital stress perception and associations with work- and health-related outcomes among general practitioners in Germany: A quantitative study. *BMC Health Services Research*, 25(1), Article 535.
- Zhang, S., Guo, P., Yuan, Y., & Ji, Y. (2025). Anxiety or engaged? Research on the impact of technostress on employees' innovative behavior in the era of artificial intelligence. *Acta Psychologica*, 259, Article 105442.