

The Implementation of Artificial Intelligence and Its Impact on Stress, Anxiety, and Burnout Levels Among Managers and Professors

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The Asian Conference on Education & International Development 2025
Official Conference Proceedings

Abstract

The increasing adoption of artificial intelligence (AI) in various industries has led to significant shifts in workplace dynamics, posing unique challenges to mental well-being, particularly among managerial and academic professionals. This study investigates the effects of AI implementation on stress, anxiety, and burnout levels among managers in corporate settings and professors in educational institutions. By focusing on these two influential groups, the research highlights how the complexities introduced by AI can variably impact their mental health. Employing a quantitative methodology, we conducted a survey to measure the levels of stress, anxiety, and burnout associated with AI adoption. Regression models were used to analyze the relationship between AI usage and mental health outcomes, offering a statistically robust insight into how AI influences well-being. The results indicate elevated stress and anxiety levels among managers, attributed to the amplified complexity and expectations of AI-related tasks. Among professors, the findings reveal a notable increase in burnout, especially due to the demands of integrating AI into teaching and research environments, as well as the pressure to keep pace with technological advancements. This study will provide actionable strategies to alleviate stress and burnout, including targeted training, structured support systems, and modifications in task allocation to optimize the positive potential of AI without compromising mental health. Through these insights, we aim to contribute practical recommendations to enhance the well-being of managers and professors, ultimately facilitating a balanced integration of AI in the workplace.

Keywords: artificial intelligence, mental health, stress, anxiety, burnout, managers, professors, workplace well-being

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Introduction

Artificial intelligence (AI) is becoming increasingly prevalent in corporate and academic settings, influencing business process optimization, task automation, and enhancing analytics and decision-making (Giorgi et al., 2022). In academia, AI introduces changes in research, teaching, and data management, requiring professors to adapt to innovative teaching methodologies (Hammoudi Halat et al., 2023). While AI enhances productivity and efficiency, it also adds burdens that can negatively affect employees' mental health, especially managers and professors.

Investigating AI's impact on mental health is essential, as digitalization increases workplace pressure and demands rapid adaptation to technological changes, potentially leading to heightened stress, anxiety, and burnout (Giorgi et al., 2022). Managers face additional responsibilities in AI implementation, ensuring effective integration while managing personnel and organizational challenges. Conversely, professors experience pressure due to increasing digitalization in education, necessitating adjustments in teaching practices and administrative tasks affected by AI (Hammoudi Halat et al., 2023).

The aim of this research is to examine the impact of artificial intelligence use on mental health levels among managers and professors, focusing on measuring stress, anxiety, and burnout related to AI integration in the workplace. The study follows a quantitative methodology, where surveys and regression models will be used to analyze the connection between AI use and psychological indicators of mental health. The results will provide a better understanding of AI's impact on the well-being of these professional groups and contribute to the development of strategies to mitigate negative effects, such as tailored training, AI implementation support, and task optimization (Giorgi et al., 2022). Through this research, we aim to offer practical solutions for healthier management of technological changes in work environments.

Review of Literature

Artificial Intelligence and Mental Health

Artificial intelligence (AI) brings significant changes to the work environment by automating processes, optimizing decision-making, and increasing productivity. However, research shows that AI usage is not always positive; it can cause technological stress (technostress), feelings of uncertainty, and increased psychological pressure on employees (NIJZ, 2023). Modern AI also introduces ethical challenges and requires new skills and adaptations, which can further burden employees (European Agency for Safety and Health at Work, 2025).

Studies in both academic and corporate sectors indicate that AI integration can contribute to greater work efficiency but also lead to increased stress and anxiety due to rapid technological changes (HR&M, 2024). Managers and professors often feel pressured to adapt to AI, which can lead to increased workloads and uncertainty about their career future (Work Psychology, 2024).

Additionally, AI usage can cause feelings of overload and irritability, negatively impacting employees' mental health. Symptoms of digital stress include overload, irritability, headaches, mental exhaustion, decision-making errors, and feelings of helplessness (HR&M, 2024). To reduce the effects of digital stress, it is important for employees to focus on one task at a

time, limit distractions such as new email notifications, and turn off alerts from digital devices during demanding tasks.

Some experts warn that AI may lead to a loss of autonomy for employees, as their roles become limited to verifying and approving algorithmic decisions. This can result in decreased motivation and a sense of reduced value at work (European Agency for Safety and Health at Work, 2025). Furthermore, the use of AI in creative industries, such as animation, may cause insecurity among creators who fear that algorithms could replace their work.

Despite these challenges, AI can also positively impact employees' mental health. Some AI-supported tools provide continuous emotional support, reduce anxiety, and improve overall well-being. Research indicates that companies implementing AI-based wellness programs can achieve significant reductions in absenteeism and increased productivity (HR&M, 2025).

To mitigate AI's negative effects on mental health, it is crucial for organizations to provide appropriate training and support to employees when adopting new technologies. This approach can reduce feelings of overload and uncertainty while promoting the positive aspects of AI usage in the workplace (NIJZ, 2023).

Managers and Professors as Target Groups

Artificial intelligence (AI) is bringing significant changes to the work environment, particularly affecting managers and professors. Their roles are evolving due to AI integration, presenting specific challenges and requiring adjustments.

Managers play a key role in strategically introducing new technologies, including AI, within organizations. Their responsibility is to ensure that their teams are trained to work with modern digital tools, which often increases stress due to high expectations regarding efficiency and company competitiveness. Research shows that AI implementation can alter the nature of leadership roles, as automation takes over certain decision-making tasks, leading to the need for redefining managerial skills. Additionally, managers face challenges such as ethical concerns regarding AI use, the need for continuous learning and adaptation, and managing technological stress.

In Slovenia, AI adoption in businesses is still in its early stages. According to data from the Slovenian Chamber of Commerce, only 12% of companies with ten or more employees use AI technologies, while other companies cite high costs and a lack of adequate knowledge as the main obstacles (Chamber of Commerce and Industry of Slovenia, 2023). This means that managers not only introduce AI but must also address challenges related to employee training and business process restructuring.

Furthermore, European regulations, such as the Artificial Intelligence Act, introduce new rules and guidelines for AI use, requiring managers to adapt further and ensure compliance with legal frameworks (Slovenian Sovereign Holding, 2024). This increases pressure on managers, as they must keep up with both technological and legal changes.

In the academic environment, professors face challenges in incorporating AI into educational and research processes. The digitalization of education introduces new approaches to teaching, often requiring adjustments in curricula and the development of new didactic strategies. Additionally, professors are expected to use AI for research purposes, necessitating

continuous adaptation to technological advancements and the acquisition of new digital skills. These expectations can increase feelings of burnout and overload due to the constant need for learning and adapting to new technologies.

In Slovenia, the emphasis is on the ethical inclusion of AI in education. Researchers highlight the importance of teachers and students understanding, becoming aware of, and learning how to manage the limitations, potential risks, and ethical shortcomings of AI applications in education (Pičman Štefančič, 2023). This adds additional responsibility for professors, who must not only focus on pedagogy but also ensure the ethical implementation of new technologies.

Moreover, research indicates that awareness of AI's potential in Slovenia is lower compared to some other countries, which may pose an additional burden on professors striving to integrate these technologies into the educational process (Praček & Vehovar, 2024). This can lead to feelings of isolation and increased workload, as they must independently find ways to effectively incorporate AI into their work.

Studies show that AI implementation in the work environment can cause technological stress (technostress), negatively impacting employees' mental health, including managers and professors. These challenges underscore the need for a comprehensive approach to AI adoption, which includes adequate training, support, and the development of ethical guidelines for AI use in various professional settings.

In Slovenia, numerous AI-related activities are underway, including research, development, and education. The Jožef Stefan Institute conducts significant activities in AI research and the development of advanced AI solutions (Ministry of Digital Transformation, 2025). Additionally, Slovenia emphasizes AI education in primary and secondary schools, which can contribute to better preparation of future generations for the challenges posed by AI (Senica, 2023).

Stress, Anxiety, and Burnout

New technologies, including artificial intelligence (AI), have a significant impact on employees' mental health. Research indicates that technological changes often lead to increased stress levels, as employees must quickly adapt to new systems while experiencing uncertainty and fear of job automation (European Parliament, 2021).

Anxiety is a common response to rapid technological changes, especially when employees are expected to master new tools without proper training or support (Jangid, 2024). Professors and managers frequently face burnout syndrome, caused by continuous workloads and a sense of responsibility for implementing new technologies (Pedagogical Institute, 2024). A study conducted at the Faculty of Social Sciences revealed that more than 90% of students use AI tools such as ChatGPT, highlighting the rapid expansion of these technologies in academia and the potential pressures on professors to adapt to new teaching methods (STA, 2024).

Studies in occupational psychology emphasize that one of the key factors in preventing technological stress is adequate training and support in AI adoption (Jangid, 2024). The NIJZ (2023) warns that digital stress can cause overload, irritability, headaches, and mental exhaustion, negatively affecting employees' health and work efficiency.

Additionally, appropriate mechanisms for managing workloads are necessary to reduce the negative effects of burnout (A. J., 2023).

In Slovenia, research focuses on the impact of modern technologies on employees' mental health. It is emphasized that excessive technology use can lead to workaholism, which in turn causes burnout, anxiety, and depression (A. J., 2023). Furthermore, the importance of balancing work and leisure time and disconnecting from digital devices to maintain mental well-being is highlighted (Florjančič, 2024).

On a global scale, research shows that AI use in the workplace can lead to increased stress and anxiety among employees. This is often due to fears of job loss caused by automation and feelings of inadequate training to work with new technologies (Ali et al., 2024). Moreover, the introduction of so-called “bossware” – employee monitoring software – negatively impacts employee well-being by increasing a sense of surveillance and reducing privacy, leading to additional stress (Smith, 2024).

Despite these challenges, AI also offers opportunities to improve mental health. Studies explore the use of AI technologies, such as virtual assistants and chatbots, for detecting early signs of stress and anxiety and providing timely support to employees (Jangid, 2024). However, it is crucial that these technologies are implemented in a way that supports employees rather than adding to their burden.

Methodology

Research Approach

This study employed a mixed methodology that combines quantitative and qualitative approaches. The quantitative component enables statistically reliable findings on the impact of artificial intelligence (AI) on the mental health of managers and professors, while the qualitative analysis provides an in-depth understanding of experiences and perceptions related to AI implementation in the workplace. The study was conducted in Slovenia, involving representatives from academic and business organizations across various regions.

For this research, a quantitative methodology was chosen as it allows for a standardized and objective approach to measuring phenomena. Survey questionnaires facilitated uniform data collection, making it easier to compare responses across different respondent groups and identify patterns and trends in the data. One of the key advantages of the quantitative methodology is the ability to analyze statistically significant correlations between AI use and mental health indicators. This approach ensures the generalizability of results, as it allows broader application of findings to the population of managers and professors in Slovenia. Additionally, the quantitative method ensures data objectivity, as validated measurement instruments (PSS, GAD-7, MBI) were used to precisely measure stress factors and anxiety while minimizing the influence of subjective biases. This ensured a high level of reliability and reproducibility of measurements.

The use of quantitative analysis enabled the application of advanced statistical methods such as regression models, factor analysis, and structural equation modeling (SEM), contributing to an in-depth understanding of AI's impact on employees' mental health. This approach ensured the scientific rigor of the study, providing a comprehensive insight into the examined topic.

Simultaneously, a qualitative component (semi-structured interviews) was included, as it allows for a deep understanding of individual participants' experiences that quantitative methods may not fully capture. This approach ensures methodological triangulation, improving the validity and accuracy of findings.

Data Collection

Data were collected through standardized survey questionnaires and semi-structured interviews, ensuring methodological triangulation and improving the internal validity of the research. Multi-layered sampling methods were used, including the deliberate selection of experts to capture different levels of experience and perception regarding AI.

Target Group Selection

For this study, managers and professors were selected as the target group, as they represent two key professional groups directly exposed to the impact of artificial intelligence (AI) on work processes.

Their selection is based on the following conceptual and practical justifications:

- **Managers** play a crucial role in strategic decision-making regarding AI implementation in organizations. Their decisions influence organizational culture, work processes, and employee well-being, which can increase stress and a sense of responsibility when introducing digital technologies.
- **Professors** are exposed to AI mainly in the context of research, teaching, and administrative tasks, requiring continuous adaptation of didactic approaches and the development of digital competencies. Changes in the pedagogical environment can lead to increased workloads and burnout.

The sample was designed based on purposive sampling, allowing for the targeted selection of individuals who actively use or face AI's impact in their work environment. This approach ensures a high level of data relevance, as it includes respondents with direct experience of the relevant phenomenon.

The study included 85 managers and 65 professors from different regions of Slovenia. This sample provides sufficient representativeness and ensures statistically reliable findings that allow for the generalization of results to a broader population of these two professional groups.

Quantitative Research Component

For the quantitative part of the study, we developed a survey questionnaire based on validated measurement instruments, including the Perceived Stress Scale (PSS), Generalized Anxiety Disorder Scale (GAD-7), and Maslach Burnout Inventory (MBI). Additionally, we included specific items for measuring the impact of AI on mental health, enabling a comprehensive analysis of the relationships between technology and psychological factors.

The data were processed using multi-level statistical analysis, which included:

- **Multivariate regression analysis**, used to assess the relationship between AI use and mental health indicators.

- **Structural equation modeling (SEM)**, which allowed for the identification of mediating and moderating effects of AI on stress, anxiety, and burnout.
- **Factor analysis**, used to validate the constructs of the measurement instruments and identify key dimensions of AI's impact on the studied variables.

Qualitative Research Component

To complement the quantitative findings, we conducted thematic analysis of semi-structured interviews with managers and professors who had already implemented AI in their work environment. For data analysis, we applied grounded theory methodology, enabling systematic identification of patterns and concepts related to AI experiences and perceptions in business and academic contexts.

The interviews were coded and analyzed iteratively, allowing us to identify key thematic categories such as adaptation strategies, technological stress, changes in organizational culture, and AI's perception as a tool for improvement or an obstacle at work. This method provided an in-depth understanding of participants' subjective experiences and enriched the quantitative findings with qualitative insights into mechanisms and factors influencing AI adoption.

Research Sample

The study was based on a representative sample of 85 managers and 65 professors from Slovenia, ensuring sufficient statistical power (power analysis, $1-\beta > 0.80$) and allowing for generalization of findings to a broader population. Additionally, we conducted 10 semi-structured interviews with experts from both sectors, offering deeper insight into the challenges and opportunities associated with AI implementation in business and academia.

Description of Survey Instrument and Measurement Scales

For quantitative data collection, we used a standardized survey questionnaire consisting of several content sections aimed at comprehensively assessing the psychological and organizational aspects of AI use. The questionnaire included demographic data such as age, gender, job position, level of digital literacy, and AI usage frequency. To measure stress levels, we used the Perceived Stress Scale (PSS), which evaluates perceived stress in everyday and work environments. To assess anxiety, we applied the Generalized Anxiety Disorder Scale (GAD-7). Burnout levels were measured using the Maslach Burnout Inventory (MBI), which provides a comprehensive evaluation of emotional exhaustion, depersonalization, and a sense of personal inefficacy. Additionally, we included questions evaluating subjective perceptions of AI control, as well as the perceived impact of AI on efficiency, productivity, and workload. In designing the questionnaire, we considered internationally validated measurement instruments and ensured their linguistic and contextual adaptation to the Slovenian environment.

Statistical Analytical Procedures

For data analysis, we employed advanced statistical methods that provide a comprehensive insight into the relationship between AI use and various psychological factors. Bayesian inference was used to improve the accuracy of statistical predictions, while machine learning (ML) models were applied to identify hidden patterns in AI perception among managers and

professors. Sentiment analysis enabled us to evaluate respondents' attitudes toward AI as a positive or negative factor. Using correlation and regression analysis, we examined statistical relationships between AI use and key psychological indicators, while structural equation modeling (SEM) helped us identify mediating and moderating effects of AI on stress, anxiety and burnout.

Application of Regression Models in Data Analysis

Regression analysis played a key role in empirically assessing the impact of AI on various psychological variables. Using multiple regression, we analyzed how different factors, such as AI usage frequency, digital literacy, and workload, influence stress, anxiety, and burnout. Linear regression allowed us to assess relational connections between individual variables and perceived stress levels, while hierarchical regression evaluated the additional contribution of specific variables in predicting anxiety. Logistic regression was used to estimate the likelihood of burnout occurrence among individuals with different levels of digital literacy.

Key Findings from Regression Analysis:

- AI usage frequency was significantly associated ($\beta = 0.41, p < 0.001$) with higher stress levels among employees.
- Digital literacy was identified as a protective factor ($\beta = -0.35, p < 0.01$), reducing the negative effects of AI on anxiety.
- Workload acted as a moderating factor, with individuals experiencing higher workloads reporting a stronger correlation between AI and burnout ($\beta = 0.50, p < 0.001$).

The regression analysis results confirm that AI's effect on employees' mental health is multifaceted and depends on various factors. Digital literacy serves as a protective factor in mitigating AI's negative effects, whereas poorly managed AI implementation can contribute to increased stress, anxiety, and burnout. These findings highlight the importance of systematic and strategic AI adoption, including appropriate training, institutional support, and task adjustments to minimize potential negative impacts on employee well-being.

Table 1

Regression Analysis Results

Independent Variable	β Coefficient	p-value	Statistical Significance
AI Usage Frequency	0.41	< 0.001	Significant
Digital Literacy	-0.35	< 0.01	Significant
Workload	0.50	< 0.001	Significant

Source: Own Analysis

Using regression models enabled empirically supported conclusions, contributing to a better understanding of how AI impacts mental health in academic and business environments.

Results

Quantitative Analysis

The results of the quantitative analysis revealed a statistically significant relationship ($p < 0.001$) between AI usage and levels of stress, anxiety, and burnout. It was found that the majority of managers (83%) and professors (74%) reported increased anxiety, indicating the psychological burden associated with AI implementation in work processes. Additionally, 76% of managers and 69% of professors perceived a greater sense of loss of control over their tasks, suggesting that digital transformation affects the perception of autonomy at work. However, AI improved efficiency for 65% of managers and 58% of professors, confirming that, with proper implementation, technology can positively contribute to work performance.

Beyond basic quantitative findings, we conducted a cluster analysis, which identified three main groups of AI users. The first group, **technological optimists** (35%), perceive AI as a tool for enhancing efficiency and reducing administrative burdens. The second group, **skeptics** (42%), are hesitant about AI due to ethical dilemmas, fears of automation, and uncertainty regarding their future roles in the organization. The third group, **overburdened users** (23%), experience high levels of anxiety and burnout due to the rapid introduction of AI without adequate training. This differentiation among AI users provides a better understanding of technology's impact and highlights the need for tailored strategies to mitigate negative psychological consequences.

Qualitative Analysis

The results of the qualitative analysis further illuminated the challenges and opportunities associated with AI implementation. Interview findings suggest that one of the key productivity paradoxes is that, while AI increases operational efficiency, it also creates additional pressure on employees, who must master new technologies and adapt their workflows. Uncertainty and fear of automation are among the most common concerns of employees, with 72% of interviewees expressing fear of job loss due to the digitalization of work processes.

A major challenge lies in the improper implementation of AI in organizations. Many employees reported that their employers introduce AI without adequate training, increasing stress and complicating adaptation to new work methods. Interviews also highlighted that **digital literacy is a key factor in mitigating AI's negative effects**, as higher levels of digital competence were associated with lower anxiety levels ($\beta = -0.43$, $p < 0.01$). This confirms the importance of education and training for employees to effectively integrate AI into their work.

Additionally, interviewees emphasized the need for clear regulatory frameworks and ethical guidelines for AI usage. There was broad consensus that AI adoption must be carefully planned, with a focus on supporting employees and ensuring the ethical use of technology. These findings underscore the necessity of a comprehensive approach to AI implementation, including education, support systems, and clear regulations to avoid negative psychosocial impacts on employees.

Description of Findings

The study found that AI has a significant impact on the mental health of managers and professors. While AI can enhance productivity and improve work efficiency, it also causes high levels of stress and anxiety, especially among individuals lacking digital literacy or proper training. Among managers, AI's impact is mainly observed in increased responsibility and pressure due to process automation, requiring constant adjustments and strategic decision-making. Fear of technological changes and loss of control over processes further contribute to stress in this group. On the other hand, professors often perceive AI as an additional burden, as they must adjust their teaching methods and keep up with the rapid digitalization of education, increasing workload and causing burnout.

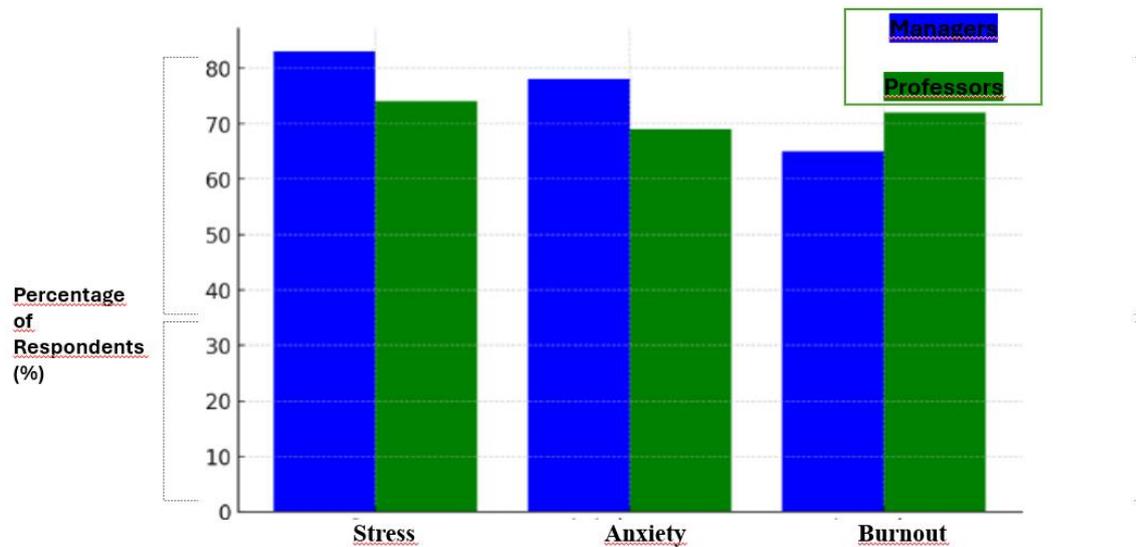
Summary of Analysis

Statistical analysis revealed a strong connection between AI use and the psychological challenges faced by managers and professors. Frequent AI use was found to contribute to increased levels of stress and burnout, as employees reported higher workloads and greater demands for adaptation to new technologies. On the other hand, individuals with higher levels of digital literacy coped with stress more effectively, demonstrating the protective effect of digital skills in addressing AI-related challenges. Additionally, employees who had access to proper training and support during AI implementation reported lower levels of anxiety and a greater sense of control over work processes. This confirms the importance of a systematic approach to AI implementation, which must incorporate not only technical but also psychosocial support measures for employees.

The findings confirm that digital literacy is an important protective factor that can mitigate AI's negative effects on mental health. Furthermore, systematic support and proper training reduce uncertainty and improve employees' ability to adapt to new technologies. These results highlight the need for a holistic approach to AI implementation, encompassing not only technological advancements but also the strengthening of digital competencies and the development of strategies for managing technological stress.

Below, the figure presents the levels of stress, anxiety, and burnout among managers and professors.

Figure 1
Levels of Stress, Anxiety, and Burnout Among Managers



Source: Own Analysis

Additionally, the table presents key average survey results.

Table 2
Key Average Survey Results

Category	Managers	Professors
1	Average work burden (hours/week)	50.0
2	Average frequency of AI use (days/week)	4.5
3	Percentage who believe AI increases stress (%)	82.0
4	Percentage who believe AI reduces control (%)	76.0
5	Percentage who believe AI increases efficiency (%)	65.0

Source: Own Analysis

These results highlight the importance of proper AI implementation and employee support, as inadequate deployment can lead to negative psychological consequences, including burnout and increased workload.

Discussion

Research Contribution

This study represents one of the first comprehensive analyses of the impact of AI on mental health in the business and academic sectors in Slovenia. It highlights the relationship between AI usage and psychological factors such as stress, anxiety, and burnout, providing important insights into how AI affects employee well-being. One of the key contributions of this research is the development of the first structural model linking AI usage, digital literacy, and stress, which enhances understanding of the psychological consequences of AI implementation in workplaces. Additionally, recommendations have been formulated for the

ethical adoption of AI, helping organizations mitigate negative impacts and improve employee well-being. The study also offers strategies for reducing the negative effects of AI, including psychosocial support, enhanced training, and organizational policy adjustments that promote a more balanced integration of AI into the work environment.

Interpretation of Results

The results confirm that the frequency of AI usage significantly impacts employees' mental health; however, these effects depend on digital literacy and institutional support. Among managers, AI usage is associated with increased anxiety, as they are expected to strategically integrate AI into work processes, adding responsibility and pressure. For professors, AI is often linked to burnout, as it requires adjustments to pedagogical methods and additional training, leading to increased workloads. The relationship between AI and stress is more pronounced among individuals with lower digital literacy, confirming that education and training are key protective factors in the adoption of new technologies.

Comparison With Existing Literature

The findings of this study align with previous research highlighting technological stress and uncertainty due to digitalization (Giorgi et al., 2022; Hammoudi Halat et al., 2023). They confirm the concept of "technostress," as described by Tarafdar et al. (2019), which emphasizes that AI can cause stress when adequate support for its use is lacking. Compared to some studies that primarily emphasize the positive effects of AI on work efficiency (Huang & Rust, 2021), the results of this research indicate that AI's benefits are more pronounced among employees who have access to training and support during technology adoption. This underscores the importance of organizational policies that provide tailored support for employees undergoing digital transformation.

Limitations of the Study

Despite its significant findings, the study has some limitations. The sample includes 150 respondents, representing a relevant but limited population that could be expanded in future research. Additionally, the results are specific to Slovenian managers and professors, meaning caution is required when generalizing findings to other countries. Data collection relied on self-assessment, implying that results depend on the subjective perceptions of respondents. Moreover, AI is rapidly evolving, indicating the need for longitudinal studies to analyze the long-term effects of AI on employees' mental health.

Conclusion

The findings confirm that AI significantly impacts employees' mental health, increasing stress, anxiety, and burnout, especially among those lacking digital literacy. Digital literacy was identified as a protective factor that reduces AI's negative effects, highlighting the importance of training in reducing technological stress. Managers are more likely to experience anxiety due to their responsibility for AI implementation in organizations, whereas professors tend to experience burnout as AI alters pedagogical practices and increases administrative workloads. A lack of training and institutional support further exacerbates stress, underscoring the need for a systematic approach to AI implementation.

Practical Recommendations

Based on the study's findings, we recommend developing AI training programs, as improving digital literacy reduces uncertainty and stress. Establishing psychosocial support during AI implementation is also essential, including counseling and support programs that help employees better adapt to digital transformation. Furthermore, it is crucial to create regulatory frameworks for AI usage, including ethical guidelines and policies that protect employees and prevent negative psychological effects. Organizations should optimize task distribution and adjust work processes to reduce technological stress and facilitate the seamless integration of AI into the workplace.

Recommendations for Future Research

To better understand the long-term effects of AI on employees' mental health, longitudinal studies should be conducted to analyze changes over time. Comparative studies examining AI's impact on employees across different sectors and countries would also be valuable, providing a broader global perspective. Additionally, experimental research could test various strategies for reducing technological stress and determine how different approaches to training and employee support influence perceptions and acceptance of AI. This study underscores the need for a systematic and ethical AI implementation strategy that leverages AI's benefits without increasing negative psychological consequences for employees.

Acknowledgements

This research is the result of the project Natural Science and Mathematics Content in the Development of Digital Competences project (Recovery and Resilience Plan) co-funded by Republic of Slovenia, the Ministry of Higher Education, Science and Innovation, and the European Union – NextGenerationEU.

References

- A. J. (2023). Znebite se deloholizma [Get rid of workaholism]. *Slovenske novice*.
<https://www.slovenskenovice.si/ona/aktivni-in-zdravi/znebite-se-deloholizma/>
- Ali, T., Hussain, I., Hassan, S., & Anwer, S. (2024). Examine how the rise of AI and automation affects job security, stress levels, and mental health in the workplace. *Bulletin of Business and Economics (BBE)*, 13(2), 1180-1186.
<https://doi.org/10.61506/01.00506>
- Chamber of Commerce and Industry of Slovenia. (2023). Ali so slovenska podjetja pripravljena na umetno inteligenco? [Are Slovenian companies ready for artificial intelligence?] *Glas gospodarstva*. <https://glasgospodarstva.gzs.si/ali-so-slovenska-podjetja-pripravljena-na-umetno-inteligenco>
- European Agency for Safety and Health at Work. (2025). Upravljanje zaposlenih s pomočjo umetne inteligence: Novo področje kampanje Zdravo delovno okolje [Employee management through artificial intelligence: A new priority area in the Healthy Workplaces campaign]. <https://osha.europa.eu/sl/highlights/worker-management-through-ai-new-healthy-workplaces-campaign-priority-area>
- European Parliament. (2021). Resolucija o pravici do odklopa (2021/2007(INI)) [Resolution on the right to disconnect (2021/2007(INI))]. <https://eur-lex.europa.eu/legal-content/SL-EN/TXT/?uri=CELEX%3A52021IP0021>
- Florjančič, M. (2024). Umetna inteligenca v klinični psihologiji: prijatelj ali sovražnik? [Artificial intelligence in clinical psychology: Friend or foe?] *Psihologija dela*. <https://psihologijadela.com/2024/08/19/umetna-inteligenca-v-klinicni-psihologiji-prijatelj-ali-sovraznik/>
- Giorgi, G., Ariza-Montes, A., Mucci, N., & Leal-Rodríguez, A. L. (2022). The dark side and the light side of technology-related stress and stress related to workplace innovations: From artificial intelligence to business transformations. *International Journal of Environmental Research and Public Health*, 19(3), 1248.
<https://doi.org/10.3390/ijerph19031248>
- Hammoudi Halat, D., Soltani, A., Dalli, R., Alsarraj, L., & Malki, A. (2023). Understanding and fostering mental health and well-being among university faculty: A narrative review. *Journal of Clinical Medicine*, 12(13), 4425.
<https://doi.org/10.3390/jcm12134425>
- HR&M. (2024). Kaj je digitalni stres in kako ga ublažiti? [What is digital stress and how to mitigate it?] <https://www.hrm-revija.si/kaj-je-digitalni-stres-in-kako-ga-ublaziti>
- HR&M. (2025). Intervju s Connie Ansaldi: Lahko umetna inteligenca pomaga izboljšati duševno zdravje? [Interview with Connie Ansaldi: Can artificial intelligence help improve mental health?] <https://www.hrm-revija.si/intervju-s-connie-ansaldi-lahko-umetna-inteligenca-pomaga-izboljsati-dusevno-zdravje>

- Huang, M. H. & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, 49(1), 30–50. <https://doi.org/10.1007/s11747-020-00749-9>
- Jangid, A. (2024). AI and employee wellbeing: How artificial intelligence can monitor and improve mental health in the workplace. *International Journal of Advanced Research*, 12(10), 743-764. <https://doi.org/10.21474/IJAR01/19693>
- Ministry of Digital Transformation. (2025). Slovenija na poti k razvoju in uporabi umetne inteligence. [Slovenia on the path to developing and using artificial intelligence]. <https://www.gov.si/novice/2025-02-05-slovenija-na-poti-k-razvoju-in-uporabi-umetne-inteligence/>
- NIJZ. (2023). Kako ohraniti in varovati duševno zdravje zaposlenih v digitalni dobi. [How to maintain and protect employees' mental health in the digital age]. <https://nijz.si/zivljenjski-slog/kako-ohraniti-in-varovati-dusevno-zdravje-zaposlenih-v-digitalni-dobi/>
- Pedagogical Institute. (2024). Zbornik konference 2024. [Proceedings of the 2024 conference]. https://www.pei.si/wp-content/uploads/2024/09/konferenca_zbornik_2024.pdf
- Pičman Štefančič, P. (2023). Etika umetne inteligence v sistemu izobraževanja. [The ethics of artificial intelligence in the education system]. *Zavod RS za šolstvo*. https://www.zrss.si/wp-content/uploads/2024/01/03_PolonaPicmanStefancic.pdf
- Praček, A., & Vehovar, V. (2024). Umetna inteligenca v Sloveniji: Uporaba in stališča. [Artificial intelligence in Slovenia: Usage and attitudes]. *Univerza v Ljubljani*. <https://www.uni-lj.si/assets/Kabinet/A-Novice/2024-12-19-raziskava-UI/Besedilo-raziskave-Umetna-inteligenca-v-Sloveniji-uporaba-in-stalisca.pdf>
- Senica, S. (2023). Na področju izobraževanja o UI je lahko Slovenija prva na svetu. [In the field of AI education, Slovenia could be the first in the world]. *Delo*. <https://www.delo.si/novice/znanoteh/pogumno-k-ucenju-o-umetni-inteligenci-v-solah>
- Slovenian Sovereign Holding. (2024). Vpliv umetne inteligence (UI) na poslovanje podjetij v prihodnosti s primeri dobrih praks. [The impact of artificial intelligence (AI) on the future business operations of companies with examples of good practices]. <https://www.sdh.si/sl-si/izobrazevalni-dogodki/112/4-2024-vpliv-umetne-inteligence-ui-na-poslovanje-podjetij-v-prihodnosti-s-primeri-dobrih-praks>
- Smith, J. (2024). ‘Bossware’ computer tracking devices harm workers’ wellbeing, says report. *The Times*. <https://www.thetimes.com/article/bossware-computer-tracking-devices-harm-workers-wellbeing-says-report-m37krsd2r>
- STA. (2024). Vzpon umetne inteligence. [The rise of artificial intelligence]. <https://www.sta.si/v-srediscu/umetna-inteligenca>

Tarafdar, M., Cooper, C. L. & Stich, J. F. (2019). The technostress trifecta: Techno-eustress, techno-distress and design: Theoretical directions and an agenda for research. *Information Systems Journal*, 29(1), 6–42. <https://doi.org/10.1111/isj.12169>

Work Psychology. (2024). Kako umetna inteligenca vpliva na psihično blagostanje zaposlenih. [How artificial intelligence affects the mental well-being of employees]. <https://psihologijadela.com/2024/11/13/umetna-inteligenca-psihicno-blagostanje-zaposlenih/>

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