Artificial Intelligence Integration for the Older Workforce

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The article addresses the challenges and opportunities of the older workforce when implementing artificial intelligence (AI). Rapid technological advancements are changing the workplace, requiring new competencies and adaptability. The older workforce faces various challenges, such as technological anxiety, complex user interfaces, decreased trust in AI, and fear of job loss. Additionally, social and organisational factors, including technological ageism and insufficient inclusion of the older workforce, further complicate the situation. Successful AI implementation requires a comprehensive and inclusive approach, including technology adjustment, training programs, and fostering psychological safety and open communication. Principles of lifelong learning, intergenerational mentorship, and ethically designed AI systems can significantly reduce resistance to new technology and improve attitudes toward AI. This new technology should not be seen as a threat but rather as a tool to complement existing knowledge and productivity within the organisation.

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1   Introduction

This article aims to synthesize the existing studies on barriers and enablers of AI use among the older workforce and to propose the necessary steps organizations can apply to implement or strengthen the use of AI.

Artificial intelligence is rapidly evolving, and the changes it brings to workplace operations are becoming increasingly crucial for all generations, especially older workers (Novak et al., 2023). This demographic group possesses extensive work experience and institutional knowledge but did not grow up alongside the rise of AI. As a result, they face challenges adapting to new technologies, hindering their ability to enhance productivity and remain competitive in a dynamic corporate environment (Casas & Román, 2024).

The percentage of the older workforce is increasing, making it imperative to empower and enable training and development to acquire new skills essential to maintaining productivity and competitiveness in the labor market (Vasilyeva & Vasileva, 2022). The global population aged 65 and older is projected to double from 703 million in 2019 to 1.5 billion by 2025, signaling a significant transformation in the labor force's demographic structure (United Nations, 2019).

Special attention is needed to address the challenges older generations face in accepting AI, including technological complexity, user interface issues, technological anxiety, and declining knowledge retention (Joshi, 2025). Understanding the attitudes of the older workforce towards AI and their concerns regarding innovative workplace approaches is crucial for developing effective training strategies and implementing AI itself (Reigas & Sukiene, 2025).

Furthermore, it is essential to focus on the resistance and hesitation of the older workforce towards engaging with AI, stemming from the contradictions between their experiences and new technologies (Golgeci et al., 2025).

In accordance with the issues and trends outlined above, the following research questions will be addressed:

RQ1: What individual barriers shape attitudes toward AI among the older workforce?

RQ2: What organizational factors shape attitudes toward AI among the older workforce?

RQ3: Which steps are most recommended to improve AI acceptance among the older workforce?

2   Methodology

To analyze the use of artificial intelligence among the older workforce, a qualitative methodology was employed, as it enables a deeper understanding of individuals' complex perceptions and connections (Novak et al., 2023). This approach was chosen for its ability to uncover contextual factors influencing older workers' interactions with AI. Gathering quantitative data alone would not suffice. A literature review, including qualitative case studies, was conducted to examine the challenges and solutions of implementing and using AI.

A structured search was conducted in major academic databases: Scopus, Web of Science and ScienceDirect. We used combination of keywords such as: Artificial Intelligence, the older workforce, trust in AI, digital skills and change management. Studies were included if they (1) addressed AI in workplace, (2) included older workers or the older workforce, (3) focused on attitude towards AI (acceptance or resistance related constructs).

We have considered both qualitative and quantitative research as well as literature reviews. More recent publications were prioritized to reflect latest developments in AI adoption. Conceptual integration and actionable guidance over exhaustive coverage of all publications were prioritized due to the nature of the article (as an article used in a conference). Included studies were synthesized using a thematic analysis, group findings into AI characteristics and implications, (2) individual concerns and organizational interventions. We used those findings in Discussion chapter to propose the phased implementation framework.

3   Results

The synthesis resulted in three main parts: (1) AI characteristics and implications, (2) individual concerns and limitations affecting the older workforce and (3) organizational interventions. To frame these parts, AI is defined as the ability of computers and machines to mimic human behavior and execute tasks autonomously (Morandin-Ahuerma, 2022). The origins of AI can be traced back to 1956 when the term was introduced in discussions about machines performing tasks previously executed by humans, utilizing their cognitive abilities (Buaka & Moid, 2024). Since then, the field has progressed through developments in machine learning and neural network methodologies (Wiberg, 2020), further advanced by the emergence of extensive digital datasets, enabling contemporary forms of AI capable of generating abstract interpretations and judgments (Dwivedi et al., 2023). Such rapid development is relevant as it amplifies the pace of workplace change, which can cause anxiety and trust concerns among the older workforce.

Today, AI can be conceptualized in various ways. Morandin-Ahuerma offers valuable insights by classifying AI along two dimensions: the level of cognitive capability and the degree of autonomy exhibited by the system (Morandin-Ahuerma, 2022).

Figure 1: Artificial Intelligence Classification
Source: Morandin-Ahuerma, 2022

The implementation of AI and attitudes towards it have been extensively studied. Reid concludes that AI initially negatively affects workers' feelings, especially when personal data is gathered and analyzed. Additionally, the use of AI in companies impacts workforce trust towards leaders and managers. Transparency and worker inclusion in such decisions are crucial for building confidence in new technology (Reid, 2024).

Significant differences in AI usage exist among various age groups. Two studies indicate that age bias in AI development is a major concern, leading to misperceptions in the utilization of digital tools (Doargajudhur & Baboo, 2024; Wissemann et al., 2022). Golgeci et al. confirm these claims, noting that only 16% of individuals aged 55 and over have used AI tools, compared with 56% of the working population aged 18 to 24 (Golgeci et al., 2025).

The limited use of AI among older individuals raises a pertinent question: why do they not utilize it as much as their younger counterparts, given its potential benefits in the workplace? First, there is a general resistance to change among the older workforce. Some older workers refuse to accept new technology and prioritize maintaining professional autonomy (Reigas & Šukienė, 2025). Chu et al. argue that AI tools were developed without considering the needs, experiences, or preferences of older users, making acceptance and efficient use more difficult (Chu et al., 2022). Older workers often experience technological anxiety exacerbated by complex user interfaces, which also reduces AI usage (Wolfe et al., 2025). If the results of using AI tools fail to meet the expectations of the older workforce, it can lead to a lack of trust in the benefits of such systems (Shandilya & Fan, 2024).

A significant factor influencing the use of AI is the fear of job loss. The assumption, although not entirely clear, is that the further development of AI will render current positions obsolete. Rapid implementation of AI in the workplace heightens concerns about job security; if AI is perceived as a threat, acceptance of new technology will be low (Wolfe et al., 2025).

However, it is not solely the resistance and fear of the older workforce that can limit AI adoption. Social and institutional factors must also be considered. Prejudice against this group can lead to social bias, known as ageism in AI, which may result in discriminatory practices and guidelines that inadvertently reinforce it (Chu et al.,

2022). This can lead to the exclusion of older workers as relevant stakeholders in discussions about AI implementation (Stypinska, 2023). Conversely, Rashid warns against paternalistic help or compassionate ageism. There have been instances where organisations have attempted to protect older workers from digitalization, potentially resulting in negative outcomes, despite known positive effects associated with digitalization (Voinea et al., 2024).

All these factors diminish the potential for successfully implementing and utilizing AI to its fullest extent. Therefore, a robust training and learning plan must be established to mitigate these limitations. This plan needs to address the barriers: technological anxiety, interface complexity, and knowledge retention, while also being tailored specifically for the older workforce. Studies indicate that an effective training program can significantly reduce barriers and enhance the older workforce's sense of competence and autonomy in the digital age (Komp et al., 2022). The content should extend beyond technical instructions to include psychological support and adaptable user interfaces, creating a more inclusive and supportive work environment (Nedeljko et al., 2023).

Although the younger workforce tends to benefit more from using artificial intelligence (Haslberger et. al., 2023), other research indicates that core principles of artificial intelligence adoption, such as motivation, self-reliance and social interaction are not age dependent, which means implementation done right can also be effective with the older workforce (Capinding & Dumayas, 2024). It makes sense that understanding how attitudes towards artificial intelligence, the most pressing concerns, and the psychological appraisals of the older workforce influence their use of digital technology (Chiu et al., 2021). Personalized training programs that focus on employees' technical skills and wellbeing have been shown to reduce resistance to artificial intelligence and increase its use and engagement (Sadeghi, 2024).

Kronberger et al. concluded that ongoing training and development will be crucial to equip the workforce with the necessary skills for the effective use of artificial intelligence (Kronberger et al., 2024).

4 Discussion

The strategy for implementing artificial intelligence should commence with a strong commitment to lifelong learning within the organisation. This commitment is a crucial part of organisational culture, empowering the older workforce to embrace new technologies and enhancing their adaptability to AI (Çolak, 2023).

4.1 Phase 1: Preparation and Review

It is essential to assess and eliminate age-biased algorithms in AI systems. This involves thorough analyses by AI ethics experts collaborating closely with IT specialists. Jung et al. highlight the issue of AI systems that prioritize speed over experience, necessitating reconfiguration to account for long-term know-how and thus avoid age discrimination (Jung et al., 2025).

Once age discrimination is addressed, it is crucial to analyze the attitudes of the older workforce toward AI. Such an analysis will assess the levels of technological anxiety and the current complexity of AI systems in place (Wolfe et al., 2025). A small focus group consisting of the older workforce members can be organized to identify potential fears associated with using AI (Joshi, 2025). The goal of these steps is to pinpoint individual and group obstacles, as well as the expectations of the older workforce.

To initiate actual implementation, a project working group must be established. This group should include representatives from HR, IT, psychology, health and safety, and, most importantly, the older workforce representatives (Fenwick et al., 2024).

4.2 Phase 2: Design and Pilot Runs

The project group should participate in designing user interfaces tailored for the older workforce. Prototype methods can be used to test user acceptance and streamline workflows (Chan et al., 2024). The objective of this step is to reduce the number of steps required to complete tasks (fewer clicks), automate frequently used operations (e.g., automated report generation), and adjust font and icon sizes.

A clear curriculum must be developed to facilitate effective training for the older workforce. The training program should incorporate micro-learning, practical examples, and real-life scenarios. It is imperative to offer courses that emphasise

how AI complements the roles of the older workforce rather than replacing them (Chetty, 2023). The ultimate goal is to enhance AI proficiency while alleviating older workers' fears of job loss.

4.3   Phase 3: Implementation and Adjustment

This phase is the most critical and time-consuming. It should begin with a pilot execution within a smaller group. Each participant should have a mentor (typically a younger person skilled in AI) available to assist and resolve issues in real-time, which can help reduce technological anxiety (Berger et al., 2024). Establishing intergenerational mentorship is also advisable, allowing the older workforce members to share their experiences while younger colleagues help them master AI tools (Dhiman et al., 2023; Sarioguz & Miser, 2024).

Effective communication is vital during this transition. Regular AI town halls are recommended, during which company leadership provides updates on implementation, explains the purpose, progress, and its impact on the workforce (Sadeghi, 2024).

For successful implementation, inclusion and engagement are essential. This can be achieved by organizing regular workshops and forums where the older workforce members can offer feedback on AI. The aim is to provide them with an opportunity to co-create how new technologies will shape the future workplace (Altepost et al., 2024). This involvement enhances their sense of control and ownership while also reducing resistance to change.

Despite these efforts, some workforce members may still struggle psychologically and technologically. Continuous and efficient psychological and IT support during the transition is crucial (Nkomo & Kalisz, 2025; Kaaria, 2024).

4.4   Phase 4: Assessment and Optimization

After the implementation and training phases, the effectiveness of the AI system must be assessed by establishing key performance indicators: attitudes toward AI (e.g., the ATAI questionnaire), productivity (measured by the time taken to complete

tasks using AI), and user satisfaction (measured through surveys at predetermined intervals).

5   Conclusion

We conclude that the implementation of artificial intelligence is a change that affects not only processes and productivity but also people. Literature analysis indicates that the older workforce often occupies less favorable positions, not necessarily due to a lack of motivation or capability, but rather due to a combination of structural, psychological, and organisational factors. Technological complexity, unsuitable user interfaces, and fears of job loss significantly impact their willingness and confidence to use AI.

Nevertheless, the findings suggest that these obstacles can be addressed through a well-thought-out and inclusive onboarding plan. The key lies in the organization's commitment to lifelong learning, which provides the older workforce with technical knowledge, psychological support, and a sense of safety. An effective approach includes establishing a multidisciplinary project group, developing user-friendly interfaces, providing mentorship, and implementing a step-by-step rollout.

Artificial intelligence should not be viewed as a tool that will replace people. Instead, it is a technology that can complement human knowledge and experience, especially among the older workforce. The implementation of AI is not merely a technical challenge but primarily an organisational and human-focused project that requires leadership, open communication, and active engagement from relevant stakeholders. While strategy is crucial, it is just one part of the solution. Most companies recognize the potential of AI, but hasty implementation can lead to issues that do not justify the associated costs. Therefore, we recommend treating AI use as a top priority, reflected in the company's overall strategy and objectives—both at the individual and group levels.

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