

SOCIAL INCLUSION FOR OLDER WORKERS IN THE IMPLEMENTATION OF DIGITAL TECHNOLOGY WITHIN ORGANIZATIONS

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Abstract - The massive implementation of digital technology has transformed organizational structures and work processes across various sectors. This transformation presents unique challenges for older workers, who are often perceived as having limitations in mastering new technologies. Social inclusion becomes a crucial aspect to ensure the continued contribution of older workers while fostering a fair and harmonious work environment. This study aims to analyze the conditions of social inclusion for older workers in organizations that adopt digital technologies extensively and to identify supporting and inhibiting factors that influence its success. The method employed is a literature review that examines relevant scholarly sources. The findings indicate that social inclusion can be achieved when organizations implement policies that consider the needs and characteristics of older workers and provide adequate support during the process of technological adaptation. The main conclusion of this study is that the success of social inclusion depends not only on individual ability to master technology but also on organizational attitudes and coworker perceptions toward the presence and contributions of older workers. This study contributes to the development of human resource management theory and provides practical guidance for organizations in creating inclusive work environments for all age groups.

Keywords: Social inclusion, older workers, digital technology, technology adoption, human resource management, inclusive workplace, work adaptation.

INTRODUCTION

The rapid development of digital technology has compelled many organizations to transform the way they operate and interact. Technologies such as integrated information systems, work software, and digital communication tools have now become an inseparable part of daily activities in the workplace (Leyh et al., 2021). The implementation of these technologies aims to increase efficiency, productivity, and the quality of work output. This work system is projected to continue evolving and become a common pattern in the future, in line with technological advancements that increasingly facilitate its execution (Putra et al., 2022). However, the changes occurring also bring about a shift in the skills and knowledge required of employees. Older workers, who possess extensive work experience, often face challenges in adapting to these changes, meaning their presence in the organization requires special attention so that they may continue to perform optimally (Kluge et al., 2019).

The phenomenon currently occurring demonstrates that the number of older workers remaining active in the workforce is on the rise. This is driven by various factors such as increased life expectancy, changes in pension policies, and the need for a sustainable source of income (Herrera, 2018). On the other hand, the massive adoption of digital technology in organizations creates a situation where older workers are required to learn new things that may differ significantly from the methods they have used for years (Hildebrandt et al., 2019). This phenomenon raises questions regarding how organizations can create conditions that allow older workers to remain engaged and valued in an increasingly technology-driven work environment.

An issue arises regarding the difference in technological mastery between age groups. Older workers are often perceived as having lower capabilities in understanding and utilizing digital technology compared to younger age groups (Solem et al., 2023). This perception frequently leads to stereotypes that can influence how older workers are treated and the opportunities they are afforded within an organization. This issue is becoming increasingly important given that older workers possess valuable experience and knowledge that can make significant contributions to organizational success (Vasconcelos, 2015). Without appropriate efforts to create social inclusion, the potential held by older workers cannot be utilized optimally.

Another related issue is the potential for social segregation between age groups in organizations that adopt digital technology massively. Older workers who struggle to keep up with technological developments may feel alienated and undervalued by both colleagues and management (Reiner et al., 2020). This condition can diminish the sense of belonging to the organization and the work motivation held by older workers. Furthermore, this social segregation can also lead to communication gaps and hinder cooperation between age groups, which ultimately can lower the effectiveness of teamwork and organizational performance as a whole (Rahn et al., 2021). Therefore, a clear understanding of how to realize social inclusion for older workers becomes a critical necessity. Intergenerational collaboration practices, such as

mixed-team programs that involve senior and junior employees in digital projects, can reduce social gaps while simultaneously enhancing knowledge transfer (Darmawan, 2020).

This study is based on the Social Aging Theory proposed by Atchley (1989), which explains that the aging process is not merely biological but is also influenced by social and environmental factors. This theory states that individuals entering old age will experience changes in their roles and social positions, and success in adapting to these changes is highly dependent on the support received from their surrounding environment. In an organizational context, this theory implies that older workers can continue to play an active and productive role if the work environment provides conditions that support adjustment and recognition of the contributions made. This theory serves as the foundation for understanding the importance of efforts to create an inclusive work environment for older workers.

The problem that arises is that many organizations implement digital technology massively without considering its impact on older workers. Organizations tend to focus on the benefits that can be obtained in terms of efficiency and productivity, without thinking about ways to ensure that all employees, including older workers, can adapt to the changes occurring (Sundstrup et al., 2022). Consequently, older workers often receive unfavorable treatment, such as limited development opportunities or work assignments that do not match their existing capabilities. This condition creates difficulties for older workers to continue playing an optimal role within the organization.

Another problem that arises is the lack of understanding regarding how to create effective social inclusion for older workers in a technology-based work environment. Many organizations assume that social inclusion can be achieved solely by providing technology training, without considering the social and psychological aspects that also influence the engagement and acceptance of older workers. In social interactions, psychological well-being serves as the foundation for an individual's ability to engage in mutually beneficial and meaningful relationships (Hariani & Mardikaningsih, 2022). Consequently, the efforts made often fail to yield optimal results, as older workers still face barriers in interacting with colleagues and feeling valued as part of the organization. This lack of understanding creates difficulties for organizations in creating a work environment that is fair and equitable for all age groups.

The urgency to conduct research on this topic is increasing, considering that the number of older workers active in the workforce is projected to continue rising in the future. Furthermore, the adoption of digital technology is predicted to become even more widespread and a primary necessity for organizations to remain competitive. Without appropriate efforts to realize social inclusion for older workers, organizations risk losing valuable potential and creating an unfair work environment (Porubčinová, 2020). This research is necessary to provide a comprehensive understanding of the conditions, supporting factors, and strategies that can be used to realize social inclusion for older workers in organizations that adopt digital technology on a massive scale.

The objective of this research is to analyze the conditions of social inclusion for older workers in organizations that adopt digital technology on a massive scale, as well as to identify the supporting and inhibiting factors that influence its success. This objective is aligned with the previously established problem formulation, ensuring that each goal pursued will provide a clear answer to the issues being faced. This research is expected to provide useful guidance for organizations in creating an inclusive work environment and optimally utilizing the potential possessed by older workers.

RESEARCH METHODS

This research employs a literature study method, which is a research approach aimed at collecting, identifying, assessing, and synthesizing various literature sources relevant to the research topic to gain a comprehensive and systematic understanding (Snyder, 2019). This method was selected because it allows the researcher to examine various studies previously conducted, identify emerging patterns and trends, and develop a deeper understanding of the subject under study. A literature study also enables the researcher to identify existing research gaps and provide recommendations for future research. This method is considered appropriate for the research objective, which seeks to analyze social inclusion for older workers in organizations that adopt digital technology on a massive scale.

The data sources used in this research consist of various scientific literature relevant to the research topic. The collected literature sources include national and international scientific journals addressing human resource management, organizational behavior, workplace aging, and work technology. Furthermore, literature sources also include textbooks written by experts in the fields of management and organization, research reports published by leading research institutions, as well as policy documents and practice guidelines published by international organizations and government bodies (Truxillo et al., 2015). The researcher ensures that the literature sources used possess high credibility and are widely recognized by the scientific community.

Data collection techniques were conducted by gathering relevant literature sources based on their alignment with the research topic and objectives. Once the literature sources were collected, the researcher read and analyzed the content to identify information relevant to the research goals. The information collected includes definitions and basic concepts of social inclusion, older workers, and digital technology; the state of social inclusion occurring in various organizations; factors influencing the success of social inclusion; and strategies that can be used to create an inclusive work environment. The data

analysis technique used in this research is content analysis and synthesis, where the collected information is categorized, analyzed critically, and combined to form a comprehensive understanding of the research topic (Jesson et al., 2011).

RESULTS AND DISCUSSIONS

The increasing complexity and demands in the modern workplace have created a greater need for individuals to adapt to changing conditions (Kodden, 2020; Darmawan et al., 2020). Innovation requires people who are creative, independent, high-spirited, and have the initiative to seek and produce ideas, methods, systems, and products (Darmawan et al., 2020). Globalization requires companies to be more flexible in managing their human resources to create a sustainable competitive advantage (Darmawan, 2022). Social inclusion in the workplace can be defined as a condition in which every individual, regardless of personal characteristics such as age, has equal opportunity to participate actively in organizational activities, receive fair treatment, and feel valued and accepted as part of a work group (Rezai et al., 2022). Within organizations that adopt digital technology on a massive scale, social inclusion for older workers means they can access and use the necessary technology, interact effectively with colleagues, and provide valuable contributions according to their capabilities. Social inclusion creates a work environment that enables every individual to develop their potential and feel a sense of belonging to the organization where they work (Zappella, 2017). This inclusion is essential for fostering a diverse workforce that enhances creativity and innovation, ultimately leading to improved organizational performance.

Older workers are individuals who have reached a certain age, generally ranging from 55 to 65 years, and are still active in the workforce. This group possesses distinct characteristics, as they have extensive work experience, deep knowledge of work processes, and the ability to solve problems based on the experience they have acquired (Pazos & Ferreira, 2022). On the other hand, older workers also frequently face challenges regarding physical capabilities and the ability to adapt to rapidly occurring changes, especially those related to the use of new technology. These characteristics need to be well understood so that organizations can create conditions suitable for supporting the engagement of older workers in technology-based work environments (Hildebrandt et al., 2019). To address these challenges, organizations must implement tailored training programs that consider the unique needs of older workers, ensuring they can effectively engage with new technologies and contribute their valuable experience.

Digital technology, when applied massively within organizations, encompasses a wide range of tools and systems such as computer hardware, work software, online communication systems, and data and information management platforms (Rakovic et al., 2022). The implementation of this technology transforms manual work processes into more automated and integrated operations. This shift demands that every employee possess sufficient skills and knowledge in utilizing these technologies to perform their tasks effectively (Boothby et al., 2010). For older workers, this transformation necessitates learning new things that may differ significantly from the work methods they have employed for years, thereby requiring greater effort and support to adapt successfully. The increasing competition in the organizational world demands the creation of a work environment that supports productivity and maximizes employee contributions (Mardikaningsih et al., 2022). Consequently, if the resulting work environment is un conducive, it is often characterized by a low sense of community, high levels of job dissatisfaction, and minimal willingness among employees to provide the extra effort required by the organization to face existing challenges (Xanthopoulou & Karampelas, 2020).

The state of social inclusion for older workers in organizations that adopt digital technology on a massive scale varies depending on the policies and practices implemented by the organization (Hildebrandt et al., 2019). In some organizations, older workers are still able to participate actively and receive fair treatment because the organization has provided adequate support in the technology adaptation process and has fostered a work environment that values age diversity (Giordani et al., 2018). However, in other organizations, older workers face difficulties in participating optimally because they do not receive sufficient development opportunities and are often viewed as a burden that cannot keep up with the changes occurring. Companies must ensure continuous training and development processes to enhance team capacity (da Silva et al., 2022). This condition demonstrates that the success of social inclusion does not occur automatically, but rather requires planned and sustainable efforts from the organization (Porubčinová, 2020).

One of the supporting factors for the success of social inclusion for older workers is the existence of organizational policies that explicitly support age diversity and ensure fair treatment for all employees. These policies may include provisions for equal access to training and development, work assignments commensurate with capabilities, and protection of the rights of older workers (Lössbroek & Hulsege, 2023). Darmawan and Marsal (2021) state that fairness in providing rewards does not mean that employees receive the same things, but rather that each individual receives rewards that correspond to their needs and contributions. When these policies are established and implemented consistently, older workers feel that their presence is recognized and valued by the organization. These policies also provide guidance for management and colleagues in interacting with and treating older workers in a fair and respectful manner.

The availability of training programs tailored to the needs and capabilities of older workers is also an important supporting factor (Fang et al., 2021). Given that every individual has a different learning style, it is crucial for

organizations to adjust training methods to the needs of the participants (Fared & Darmawan, 2021). Training programs designed specifically for older workers consider more suitable learning methods, such as the gradual delivery of material, the use of examples relevant to their existing work experience, and the provision of opportunities for hands-on practice. Such training programs make it easier for older workers to understand and master the necessary technology, enabling them to perform their duties with confidence. Furthermore, training programs can also increase the self-confidence and work motivation of older workers (Hildebrandt et al., 2019).

Management support within an organization also plays a crucial role in creating social inclusion for older workers. Management that provides sufficient attention and support will cultivate a work environment that facilitates the adaptation and engagement processes of older workers (Blomé et al., 2020). This support may take the form of providing necessary resources, offering encouragement and motivation, and assisting in troubleshooting the challenges older workers face during the technological adaptation process. When management demonstrates a genuine commitment to the success of social inclusion, it serves as a model for all employees to respect and support the presence of older workers within the organization.

The existence of an inter-employee mentoring system is also an effective supporting factor in realizing social inclusion for older workers. An inclusive work environment can create a more collaborative atmosphere that supports diversity in the workplace (Abdullah et al., 2021). When individuals receive sufficient support, they feel more confident in their ability to learn and master new technological systems (Abdullah et al., 2021). Self-efficacy, or the belief in one's own capability, plays a crucial role in predicting the extent to which employees are able to adapt to technological changes in the workplace (Mardikaningsih & Darmawan, 2022). This system allows older workers to receive direct assistance from colleagues who are more skilled in using digital technology, ensuring the learning process occurs more naturally and at a pace suited to each individual's understanding. Mentoring is not limited to the technical aspects of using work tools, but also encompasses explanations regarding the context of technology application in daily work processes. The interactions fostered within this system also strengthen social relationships between age groups, ensuring that older workers feel more accepted and have sufficient support to participate actively in organizational activities (Niesel, 2021).

Another supporting factor is the adjustment of technology design and the work environment to consider the needs of older workers. In the digital era, learning patterns are undergoing changes through online interactions that influence how students acquire information (Darmawan, 2021). These adjustments may include simplifying user interfaces, providing easy-to-understand user guides, and modifying work equipment to suit physical conditions and sensory abilities that may decline with age. The implementation of fair and sustainable technology is a key factor in realizing a better and more sustainable future (Essa & Mardikaningsih, 2023). When implemented technology is accessible and easily used by all employees regardless of age, the technical barriers that often serve as a source of difficulty for older workers can be significantly reduced. Such adjustments also demonstrate that the organization considers the diverse needs of its employees, thereby fostering a sense of being valued and achieving higher engagement among older workers.

Recognition of the contributions and experience possessed by older workers is also a very important supporting factor (Submitter et al., 2021). This certainly poses a challenge for organizations, as they are required to retain their employees so that they can develop through their management strategies in order to compete and ensure employees remain consistent in their performance (Prem et al., 2017). Older workers possess deep knowledge of work processes, organizational culture, and ways to overcome problems that arise in daily operations (Submitter et al., 2021). Recognition of these strengths can be achieved by assigning them roles as advisors, problem solvers, or mentors for younger colleagues. When their experience and knowledge are valued and utilized optimally, older workers will feel that their presence has significant value for the organization's success. High levels of self-confidence empower employees to adapt quickly to new challenges and organizational changes, which is crucial for sustaining company growth (Rojak & Darmawan, 2022). This will increase their self-confidence and work motivation, making them more willing to adapt to the technological changes that occur.

On the other hand, there are inhibiting factors that can hinder the success of social inclusion for older workers. One of the primary factors is the existence of negative stereotypes attached to older workers, such as the assumption that they are unable to learn new things, slow to adapt, or lack interest in technological developments (Giordani et al., 2018). These stereotypes frequently lead to unfavorable treatment, such as limited development opportunities, unchallenging work assignments, or even exclusion from decision-making processes. Such stereotypes can also diminish the self-confidence of older workers, causing them to hesitate in participating actively in organizational activities and tending to withdraw from the work environment. These unilateral assessments widen the gap in employment opportunities due to the organization's lack of preparedness in managing age diversity in the era of automation (Gani & Darmawan, 2023). A lack of opportunity to access appropriate training and development also acts as a significant inhibiting factor. Many organizations provide technology training programs with methods and materials designed for younger age groups, making them difficult for older workers to follow (Hedge & Feldman, 2015). Making a service technically accessible does not necessarily mean that the service can be utilized effectively by everyone (Ramle & Mardikaningsih, 2022).

Furthermore, older workers often receive fewer opportunities to participate in training programs compared to their younger colleagues, due to the assumption that they will soon retire and thus development investments will not yield

optimal benefits. This limitation reinforces the existence of barriers to access and mastery of digital skills that hinder the productivity of certain groups of workers (Arifin & Darmawan, 2021). Therefore, the role of digital leadership is crucial for building the readiness of all elements of the workforce to face changes in automated work systems (Mardikaningsih & Darmawan, 2023). This condition makes it difficult for older workers to master the necessary skills, preventing them from participating optimally in an increasingly technology-driven work environment.

Challenges related to physical and cognitive abilities can also hinder the success of social inclusion for older workers. As age increases, certain aspects of ability such as processing speed, visual acuity, or manual dexterity may decline, creating difficulties in using technology designed without consideration for these conditions (Hildebrandt et al., 2019). This mismatch in operational system design triggers work risks that can interfere with the successful achievement of organizational work programs (da Silva et al., 2022). Furthermore, older workers often possess deeply ingrained ways of thinking and working, which require greater time and effort to adapt to new work systems. Restructuring governance and innovating user-friendly services are necessary for the adaptation of new work systems to proceed effectively (Putra et al., 2023). If the organization does not provide sufficient support to address these challenges, older workers will struggle to perform their tasks and interact effectively with colleagues.

Lack of effective communication is also an inhibiting factor that is often overlooked (Constantin, 2014). Within the framework of positive psychology, effective communication acts as a means to build good relationships between individuals and their superiors and colleagues, as well as to create an open and mutually respectful work climate (Eddine & Darmawan, 2022). The willingness to support one another in mastering new systems is essentially influenced by strong positive psychological dimensions to maintain individual commitment to completing shared tasks (Darmawan & Mardikaningsih, 2021). Communication that does not function well between management, colleagues, and older workers can lead to misunderstandings and mistrust between parties. Older workers may not understand the purpose and benefits of implementing technology, leading them to resist the changes occurring. On the other hand, management and colleagues may not grasp the difficulties faced by older workers, resulting in a lack of appropriate support. Ineffective communication can also lead to feelings of alienation and being undervalued among older workers, causing them to be unwilling to participate actively in organizational activities.

Another inhibiting factor is the difference in communication and interaction styles between age groups, which is becoming increasingly apparent with the use of digital technology. Younger workers tend to use digital communication tools such as instant messaging or social media for interaction, whereas older workers are more comfortable with traditional communication methods such as face-to-face conversations or telephone calls (Nurhas et al., 2021). This difference can create a communication gap that makes it difficult for older workers to keep up with information developments and interact with colleagues effectively. Therefore, it is important to emphasize a culture of mutual sharing and learning so that every employee feels comfortable exchanging ideas, experiences, and solutions to the work challenges they face. Furthermore, managers must be able to facilitate fast and relevant access to information for all employees so that work processes become more efficient and the quality of decision-making improves (Mardikaningsih & Darmawan, 2022). Managers must be capable of leading this transition process in a way that emphasizes clear communication and the management of realistic expectations, ensuring that employees understand and accept the changes (Gani & Darmawan, 2022). If an organization does not pay sufficient attention to these differences, the communication gap will widen further and lead to social segregation between age groups in the workplace (Lagacé et al., 2016).

The success of social inclusion for older workers is also influenced by the organization's ability to create a work environment that supports cooperation between age groups (Choi & Jarrott, 2021). Good cooperation allows each group to complement the strengths and weaknesses of others, where older workers can provide valuable knowledge and experience, while younger workers can share skills in using digital technology. A positive orientation toward correcting work errors requires ethical leadership from management to build a healthy and sustainable organizational culture (Mardikaningsih et al., 2022). A work environment that supports such cooperation creates mutually beneficial relationships between age groups, ensuring that every individual feels valued and holds an important role in the organization's success. Effective cooperation also strengthens social bonds between employees, thereby creating a harmonious and inclusive workplace. Beyond interaction factors, the support of social capital and strong team collaboration serves as a crucial foundation for maintaining work quality within an organization (Putra et al., 2021). The process of developing a competent and efficiently functioning team requires not only technical skills but also leaders who understand how to encourage their members (Rojak & Darmawan, 2023).

The role of management in creating an inclusive work environment is paramount. Management holds the responsibility of ensuring that the policies and practices implemented support age diversity and provide equal opportunities for all employees (Gordon, 2018). Active human resource involvement reflects the adoption of transformational leadership, which acts as an agent of change for the organization's value system (Rojak et al., 2022). Furthermore, organizations need to provide psychological support for leaders who must make difficult decisions regarding professional misconduct (Eddine & Darmawan, 2021). Management must also serve as a model in treating older workers with respect and valuing the contributions they provide. Additionally, management needs to periodically monitor and evaluate the state of social inclusion within the organization and implement necessary improvements to address emerging

issues. Consistent commitment and attention from management will create a solid foundation for the success of social inclusion for older workers.

The impact of creating social inclusion for older workers is substantial, both for the workers themselves and for the organization. For older workers, social inclusion fosters a sense of being valued, self-confidence, and high work motivation, enabling them to continue contributing optimally within the organization (Martínez & Sonsino, 2021). For the organization, social inclusion allows for the maximum utilization of the potential and experience possessed by older workers, which can enhance performance and the organization's competitive advantage. The application of social aspects, such as increasing workforce well-being, will boost labor productivity, which in turn will provide economic benefits to the company (Barzani et al., 2022). Moreover, an inclusive work environment can improve the organization's public image and attract high-quality talent from various age groups. Support and active involvement from the leadership team are essential to building a strong culture of sustainability throughout the organization (Mardikaningsih & Darmawan, 2021).

Social inclusion for older workers in organizations that adopt digital technologies extensively is an important issue that must be addressed and realized. Social inclusion benefits not only older workers but also provides significant advantages for organizations as a whole. Achieving successful inclusion requires planned and continuous efforts from all parties involved, ranging from the formulation of appropriate policies, the provision of adequate support, to the creation of organizational cultures that value age diversity. With the right efforts, organizations can establish fair and equitable work environments in which every individual can develop their potential and contribute optimally regardless of age.

CONCLUSIONS

Social inclusion for older workers in organizations that adopt digital technologies extensively refers to conditions in which older employees can actively participate, receive fair treatment, and feel valued and accepted as part of the organization. This condition is influenced by supporting factors such as fair organizational policies, tailored training programs, managerial support, mentoring systems, technological adjustments, and recognition of contributions. Conversely, inhibiting factors include negative stereotypes, limited opportunities for development, physical and cognitive challenges, ineffective communication, and differences in interaction styles across age groups. The success of social inclusion requires integrated efforts from all parties within the organization.

Future research could conduct empirical studies to test the relevance of the identified factors across different types of organizations and industrial sectors, thereby producing findings that are more specific and aligned with real-world conditions. Further studies may also develop measurable frameworks that organizations can use to assess the level of social inclusion achieved and identify necessary improvements. Additionally, future research could examine the effectiveness of various strategies implemented in different organizations, resulting in more detailed and practical guidelines to support successful inclusion of older workers.

The findings of this study provide practical implications for organizations in creating inclusive work environments for older employees. Organizations need to formulate policies that explicitly support age diversity and ensure fair treatment for all workers. They should also provide training programs tailored to the needs and abilities of older employees and establish mentoring systems that facilitate technological adaptation. Moreover, organizations must foster cultures that value the experience and contributions of every individual regardless of age and ensure effective communication across age groups. By implementing these measures, organizations can create equitable work environments in which the potential of all employees can be fully utilized to achieve organizational goals.

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