From Data to Therapy: The Role of Artificial Intelligence and Social Robots in Shaping the Future of Work and Psychological Well-Being1

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Abstract: The report analyzes intergenerational interaction in the workplace and the related challenges and opportunities. Based on empirical research conducted using the Delphi method, specific trends are outlined in the integration of artificial intelligence and robotic technologies into psychological practice and organizational communication. The results indicate that technological optimism increases with age and education, while younger respondents and those with limited knowledge of AI demonstrate higher levels of skepticism. Correlational analysis confirms that digitalization and automation are perceived as interconnected processes, with the preservation of the human factor in therapy remaining a key challenge. The forecast for 2040 envisions the gradual integration of social robots into clinical practice and psychological organizations, where they will assist professionals without replacing their roles. This study highlights the need for a balanced combination of technology, empathy, and intergenerational collaboration to ensure sustainable development in organizational environments.

Keywords: generation, workplace, artificial intelligence, social robots, organizational communication.

Introduction

In the context of globalization and accelerated technological development, organizations are faced with the necessity of managing a new reality – the coexistence of different generations within the same workplace. This phenomenon is unprecedented in the history of labor relations, as for the first time up to five generations are actively involved in the professional environment. Such a multi-generational structure creates unique opportunities for the exchange of experience, the blending of traditions and innovations, as well as for building flexible organizational models. At the same time, differences in values, motivation, and communication styles generate challenges that can affect organizational engagement, productivity, and sustainability.

The object of this research is the relationships between generations in the modern work environment, with a focus on their significance for organizational culture and team effectiveness. The subject of the research includes the specific manifestations of communication and motivational differences between generations, as well as the influence of technological transformation on the way these differences appear in the organizational context.

The main goal of the research is to analyze the challenges and prospects of intergenerational interaction, with particular emphasis on the role of artificial intelligence and robotic technologies in transforming communication processes within organizations. The study seeks to answer the question of how multi-generational teams can turn their differences into a strategic advantage, and in what ways emerging technological trends will reshape the dynamics of intergenerational collaboration.

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Research Framework

Within the scope of the research, both the theoretical framework of the problem and the empirical data from a survey conducted using the Delphi method among representatives of different age groups in the field of social sciences are examined. The analysis of the results makes it possible to identify key correlations between age, educational level, and attitudes toward digitalization, while also outlining the main forecasts for the development of artificial intelligence and social robots up to the year 2040.

The task of the present study is not only to describe the existing differences and potential conflicts between generations but also to propose a practical perspective for overcoming them through effective communication, intergenerational mentoring, and adaptive organizational models. At the same time, it seeks to answer the challenge of how technological innovations can be integrated in a way that preserves the human factor and emotional connection as core elements of professional interaction.

Why is the topic important?

In today's world of dynamically evolving organizations, intergenerational interaction is emerging as a key factor for the sustainability and effectiveness of the workplace. The multigenerational workforce is an unprecedented phenomenon in the history of labor relations— for the first time, up to four, and in some cases even five, generations function together within the same organization. This coexistence creates significant opportunities for synergy between accumulated professional experience and the drive for innovation, but at the same time generates numerous challenges related to differences in values, expectations, and work styles.

Generational diversity in the organizational environment can be regarded as a strategic advantage. Multiple perspectives and professional approaches contribute to higher creativity, adaptability, and the ability to implement innovations within teams. At the same time, the lack of effective management of this diversity can lead to communication barriers, conflicts, and decreased productivity. The impact of intergenerational differences on corporate culture and organizational effectiveness is substantial. Insufficient understanding between generations can result in numerous negative consequences: low engagement and high employee turnover, especially among younger workers; difficulties in adapting to technological changes due to barriers in training and the adoption of new methods; as well as challenges related to leadership style and motivation.

In this context, managing intergenerational relationships should be seen not only as a task of the Human Resources department but as a strategic necessity for the sustainable development of any organization. Understanding the main characteristics of different generations in the workplace is a prerequisite for building a harmonious and effective environment. Although these characteristics are generalizations and cannot be applied to every individual, they serve as a useful guide for understanding the values, motivational attitudes, and preferred working styles that each generation brings to organizational life.

Theoretical Review

The conceptualization of "generations" in the organizational context is rooted in Mannheim's classical sociological perspective, according to which social cohorts are formed by shared historical events and socialization, and therefore develop relatively similar attitudes and patterns of action (Mannheim, 1952). Later interpretations emphasize that the idea of generations is a useful analytical tool, but requires careful distinction from age effects and period influences (Pilcher, 1994).

Contemporary literature is critical of popular, often consultancy-driven claims about sharp "intergenerational" differences in work values and behavior. Reviews of the evidence highlight methodological problems (confounding age, period, and cohort effects) and show that observed differences are often small, unstable, and context-dependent (Parry & Urwin, 2011; Lyons & Kuron, 2014). More recent syntheses even "debunk" common myths about generations, warning that organizational decisions based on stereotypes are poorly supported empirically (Rudolph et al., 2021).

Empirical research provides a more nuanced picture. A meta-analysis by Costanza et al. (2012) found trivial to small effects of "generation" on job satisfaction, organizational commitment, and turnover intentions. At the same time, studies on values debates show temporal shifts (e.g., increases in extrinsic and hedonic orientations), which may reflect historical context and life cycle rather than "essential" generational differences (Twenge et al., 2010). Overall, the literature suggests avoiding essentialism and seeking contextual interpretation of differences.

In terms of communication, research on media richness theory posits that the effectiveness of interaction depends on the match between the ambiguity of the task and the "richness" of the channel (Daft & Lengel, 1986). Later experimental tests with "new media" equated richness with multiple cues and feedback but found mixed results, suggesting that context and team norms are critical (Dennis & Kinney, 1998). Within multigenerational teams, this means that channel preferences (email, chat, video) should be regarded as organizationally negotiated practices rather than fixed generational "traits."

Technological adaptation is also better explained by general models of technology acceptance than by generational labels. The Unified Theory of Acceptance and Use of Technology (UTAUT) emphasizes the role of expected usefulness and ease of use, social influence, and facilitating conditions, with age acting as a moderator rather than a root cause (Venkatesh et al., 2003). Psychological factors—such as self-efficacy and computer anxiety—mediate age differences in technology use (Czaja et al., 2006), and some field longitudinal studies show that age and gender moderate the paths of adoption and use (Morris et al., 2005). Therefore, interventions should address training, interface design, and support rather than rely on generational generalizations.

The widely cited dichotomy of "digital natives" versus "digital immigrants" (Prensky, 2001) has received serious academic criticism. Contemporary reviews show that the notion of the "digital native" as an automatically more competent user is a myth; information literacy and multitasking skills are not determined by year of birth but by training and experience (Kirschner & De Bruyckere, 2017). As a result, organizational policies that assume technological competence based on generation risk underestimating training and support needs and reinforcing stereotypes.

Practical frameworks for bridging differences emphasize mentoring and, more specifically, reverse mentoring, where younger employees support senior colleagues in digital competencies, while seniors transmit strategic and organizational experience (Chaudhuri & Ghosh, 2012). Classic mentoring theory considers career and psychosocial benefits and the stages of relationship development (Kram, 1985), which helps design sustainable knowledge-sharing programs and build trust between generations.

In summary, the theoretical perspective suggests thinking of "generations" as contextual cohorts rather than deterministic categories. For organizational practice, this means:

(a) avoiding stereotype-based policies,
(b) using general models of communication and technology adoption where age/generation acts as a moderator, and
(c) building two-way learning mechanisms (mentoring, training, communication channel agreements) that minimize communication and technological barriers.

This approach is empirically stronger and managerially more effective than attempts to "manage generations."

Research Hypotheses and Methodology

Based on the reviewed theoretical propositions on intergenerational differences and technology adoption in organizational environments, several key hypotheses can be formulated:

There are differences in the degree of technological optimism among generations, with older professionals demonstrating greater confidence in the potential of digitalization and the integration of artificial intelligence.

Educational level and experience influence attitudes toward artificial intelligence and social robots. Education and experience, rather than generational affiliation, play a decisive role in the positive perception of digital innovations.

Preserving the human factor in therapeutic and organizational communication is perceived as critical by all generations. Effective communication requires combining technological tools with emotional connection and human contact.

There is a strong correlation between attitudes toward digitalization and automation: respondents who view AI positively are also more inclined to accept robotic technologies as a natural extension of digital transformation.

To test these hypotheses, the Delphi method was chosen, characterized by the sequential collection and analysis of expert opinions through several rounds of anonymous surveys. This method is particularly suitable for exploring complex social and technological factors and for generating reliable forecasts up to 2040.

Generational Characteristics

Traditionalists (Silent Generation, born before 1945) – Loyalty, discipline, respect for authority; prefer stability and formality; significant as mentors and carriers of institutional memory.

Baby Boomers (1946–1964) – Strong work ethic, ambition, achievement orientation; value hierarchy and personal contact; motivated by recognition and prestige; still vital in transferring leadership and communication skills.

Generation X (1965–1980) – Value autonomy, flexibility, and work–life balance; skeptical of rigid hierarchies; adapt well to technology; act as mediators between older and younger cohorts.

Millennials (1981–1996) – Innovation-oriented, seek meaningful work and collaboration; expect feedback, transparency, and social engagement; motivated by flexibility and opportunities for growth; emerging as leaders shaping new organizational culture.

Generation Z (born after 1997) – First fully digital generation; value autonomy, transparency, and speed; oriented toward short-term results; motivated by tech-savvy employers and career development; driving digital transformation.

The interaction between these generations, rather than their isolated existence, will shape the future organizational environment—flexible, technologically advanced, and socially responsible.

Short-, Medium-, and Long-Term Outlook (AI and Social Robots in Psychology)
2025–2030 (Short term): Initial experiments with social robots; skepticism among social scientists; insufficient regulation; gradual acceptance.

2030–2035 (Medium term): Key challenge: ensuring ethical and emotional adequacy of AI-based therapies; broader clinical applications (autism, elderly care, anxiety disorders).

2035–2040 (Long term): Full integration of social robots as part of therapeutic teams (diagnosis, monitoring, therapy), without replacing human specialists; main challenge: preserving the human element and managing social impact.

The Opportunities Artificial Intelligence Offers to Specialists and Practitioners

Artificial intelligence enables the creation of analyses based on large volumes of information, even by people who may not possess the necessary skills for such activities. This could help businesses identify job candidates who may lack certain competencies but can still work effectively in a given field by using AI. In this way, they would improve in the course of their work and practically become competitive with people of greater experience. This, in turn, could support their success.

In the modern business environment, the use of AI is becoming increasingly necessary in order to make decisions based on accurate data. New technologies eliminate the possibility of personal biases that are inherent in human decision-making. Robots make impartial decisions based on the raw data available to them. By contrast, personal

preferences can pose serious challenges for many people who have different qualities and interests. Thanks to new technologies, decision-making becomes a much more transparent and thorough process.

People who do not have the opportunity to pursue higher education can become successful entrepreneurs by using AI or by becoming certified to work with various types of automated machines. A good example of this can be found in professions such as marketing, advertising, journalism, library science, and public relations, which are closely linked to social media, the creation of various types of content, and the discovery and structuring of ideas. Of course, in many other professions beyond those listed above, AI can support the processes of content creation, information selection, strategy development, and idea generation. All of this is of critical importance for a successful individual—regardless of whether they have formal education in a given field or simply evolve into skilled practitioners, which does not exclude the possibility of becoming recognized specialists.

Artificial intelligence is rapidly transforming the way we work, communicate, and live. It not only changes business models but also contributes significantly to personal development and the successful achievement of life goals.

The Use of Social Robots in Mental Health and Well-Being Research

The field of robotics is increasingly included in discussions about the delivery of technology-assisted, interactive, and responsive interventions for mental health and psychological well-being. In the study Use of Social Robots in Mental Health and Well-Being Research: Systematic Review, the authors reviewed 12 studies that summarize the potential of Socially Assistive Robots (SARs).

These are robotic technological platforms equipped with audio, visual, and movement capabilities, developed for social interaction with people while simultaneously helping them manage their physical and psychological well-being. The article presents results from research exploring the applicability of robots in different situations.

The review makes it clear that new robots are constantly emerging, and their programming is also dynamically evolving. In this way, they adapt and expand, allowing the use of SARs in research and interventions for mental health.

All of this, as examined in the cited article, highlights the additional opportunities for specialists conducting different types of psychological testing. Robots provide accuracy during such research, convenience, and even time savings. They evolve alongside technological innovations and can potentially support the therapeutic process, acting as so-called "robot therapists" powered by embodied artificial intelligence. This supports the work of professionals in psychiatry, psychology, and psychotherapy.

According to a study by Fiske, Henningsen, and Buyx (2019), ethical issues related to artificial intelligence in psychiatry, psychology, and psychotherapy are of great significance for the development of mental health. They point out that innovations—ranging from "virtual psychotherapists," to social robots in dementia and autism care, to robots for sexual disorders—are increasingly offering high-level therapeutic interventions previously provided only by highly trained and qualified health professionals.

Using thematic literature searches and established principles of medical ethics, the authors analyzed the ethical and social aspects of current applications of AI in psychiatry, psychology, and psychotherapy. The analysis was structured in three steps:

Assessing potential benefits,
Analyzing key ethical issues and challenges,
Discussing specific ethical and social questions related to interventions.
The results include: new treatment methods, opportunities to engage hard-to-reach populations, improved patient responsiveness, and freeing up clinicians' time.

The main ethical issues and challenges include: preventing harm and data ethics concerns; lack of guidelines for the development of AI applications, their clinical integration, and training of health professionals; gaps in ethical and regulatory frameworks; potential for misuse, including replacing established services, which could worsen

existing health inequalities. Identified challenges also include risk assessment, recommendations and monitoring, respect for and protection of patient autonomy, the role of non-human therapy, transparency in the use of algorithms, and concerns regarding the long-term effects of these applications on understandings of illness and the human condition.

All this shows that robots have an important role in professions related to mental health: they can support the therapeutic process and, in some situations, may even become the preferred method for prevention and treatment.

In the article Exploring the Potential of Social Robots for Speech and Language Therapy: A Review and Analysis of Interactive Scenarios, the authors present how robots support speech and language therapy. The paper notes that the use of innovative technologies in speech and language therapy (SLT) is attracting significant attention today. Although this is a promising area of research, SARs have not yet been thoroughly studied or widely used in SLT. The study concludes that despite limited research on the use of social robots for children and adolescents with communication disorders (CD), promising results have been reported. The authors discuss methodological, technical, and ethical limitations related to the use of SARs in clinical or home-based SLT, as well as the great potential of conversational AI as an auxiliary technology to support speech and language interventions.

The article Social Robot Interventions for Child Healthcare: A Systematic Review of the Literature highlights that social robots and their interactive functions are well received by children. This suggests that using social robots for children is a reasonable approach to supporting them and improving their health. The acceptability, potential, and value of social robots in children's healthcare have been discussed in numerous previous studies. The review covers a 12-year period (2010–2022), searching widely used bibliographic databases such as Scopus and PubMed, in order to identify recent studies using social robots in digital healthcare interventions.

Robot therapy also offers an innovative approach to elderly mental healthcare. This is addressed by Takanori Shibata and Kazuyoshi Wada in the article Robot Therapy: A New Approach for Mental Healthcare of the Elderly – A Mini-Review. The authors present how different types of robots are designed for specific purposes. The mental healthcare robot Paro aims to enrich daily life and heal the human mind. It was designed to maintain long-term interactions with people and to provide psychological, physiological, and social benefits. Experimental research results showed that Paro has significant potential for providing mental healthcare to elderly people. To ensure its potential, the next step is to develop effective methods for its use.

Paro has been recognized internationally, with similar psychological effects reported across countries. However, cultural differences affect acceptance. In Europe, people tend to recognize the therapeutic effects of interacting with Paro, as it is widely used in hospitals and nursing homes. In Asian countries, it has not been widely accepted. In the United States, Paro is viewed both as a therapeutic tool and as a companion. Therefore, presenting it in culturally appropriate ways is crucial.

Results and Conclusion

In light of the results, it can be concluded that the formulated hypotheses are confirmed. Age, education, and experience correlate with more positive perceptions of AI; technology integration is regarded as a complex and interconnected process; and despite the anticipated rise in automation, preserving the human factor remains a critical priority.

Thus, the hypotheses concerning intergenerational differences, the role of education, and the complex nature of digitalization are confirmed. This highlights the necessity of balancing technological innovations with the ethical and communicative dimensions of psychological practice.

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