COLLEAGUES' SUPPORT AND TECHNO-COMPLEXITY: THE IMPORTANCE OF A POSITIVE AGING CLIMATE

Teresa Galanti*	Department of Psychology, G. d'Annunzio University of Chieti-Pescara, Chieti, Italy	teresa.galanti@unich.it
Stefania Fantinelli	Faculty of Psychology, e-Campus University, Rome, Italy	stefania.fantinelli@uniecampus.it
Veronica Giffi	Department of Psychology, G. d'Annunzio University of Chieti-Pescara, Chieti, Italy	veronica.giffi@unich.it
Michela Cortini	Department of Psychology, G. d'Annunzio University of Chieti-Pescara, Chieti, Italy	cortini@unich.it

*corresponding author

ABSTRACT

Aim/Purpose	With a focus on promoting sustainable career paths, this article investigates the intricate relationship between age diversity management and techno-complexity, emphasizing the pivotal role of a supportive work environment.
Background	In the modern workplace, the dynamics of age diversity emerge as a crucial element influencing the well-being and productivity of employees, particularly amidst the swiftly evolving digital landscape. This becomes especially pertinent when considering workers' unique challenges adapting to technological advancements.
Methodology	Utilizing a cross-sectional design, data were collected from 160 employees in an Italian multinational company within the metalworking sector.
Contribution	This study provides valuable insights into the complex dynamics between the aging climate, colleagues' support, and techno-complexity. It emphasized the importance of considering the direct effects of organizational factors and their indirect influences through social dynamics and support structures within the workplace.

Findings	The results revealed the mediating role of colleagues' support in the relationship between the aging climate and techno-complexity. These findings highlight the importance of a supportive work environment in the context of sustainable career development, contributing to a comprehensive understanding of diversity management within the modern digital era.
Recommendations for Practitioners	Organizations should adopt a holistic approach to create an age-friendly climate to promote diversity, inclusion, and accommodating the unique needs of employees. They should also develop employer branding strategies centered on diversity and inclusion to attract top talent and enhance innovation. Effective communication is crucial to address generational stereotypes and educate employees on the value of diversity.
Impact on Society	Organizations should consider implementing policies aimed at addressing age-related challenges, providing training programs to enhance digital literacy among older employees, and creating an adaptable work environment.
Future Research	Future studies could delve into specific organizational contexts, technological demands, and individual differences that may modulate this relationship.
Keywords	age diversity management, techno-complexity, supportive work environment, sustainable career

INTRODUCTION

In the modern workplace, the dynamics of age diversity, which refers to the prevailing organizational atmosphere regarding age-related diversity, is a critical factor affecting the well-being and productivity of workers (Boehm & Kunze, 2014; Schneid et al., 2016). Several studies have demonstrated that fostering a diverse age range within teams enhances creativity and problem-solving capabilities (Kadam et al., 2020). Parallelly, research by Backes-Gellner and Veen (2013) found that teams with a mix of age groups consistently outperformed homogeneous teams in generating innovative solutions. Additionally, Yang and Matz-Costa (2018) highlight that workplaces embracing age diversity exhibit higher levels of employee engagement, as varied perspectives contribute to a more dynamic and inclusive work environment. So, the aging of the global workforce presents both opportunities and challenges for organizations striving to create sustainable and healthy workplaces (Riach, 2009). From this perspective, effective age diversity management strategies are crucial. First, they could implement robust knowledge transfer programs (Burkey, 2022; Burmeister et al., 2020; Gerpott et al., 2019). According to Burmeister et al. (2020), mentorship initiatives facilitate the exchange of valuable experience and expertise between older and younger employees and foster a collaborative learning environment across generations. Moreover, embracing flexible work arrangements emerges as a key facet of age diversity management (Allen et al., 2021; Ferdous et al., 2023; Stavrou & Anastassiadou, 2022). According to Ferdous et al. (2023), organizations offering flexible options create environments where older employees can contribute meaningfully while accommodating their changing preferences. This approach not only enhances workforce sustainability but also aligns with the diverse needs of employees at various stages of their careers. Furthermore, in the realm of inclusive policies and practices, organizations can further fortify age diversity management, establishing age-neutral performance evaluations and tailoring training programs to diverse learning styles (Appannah et al., 2017; De Meuse et al., 2007; Sarkar, 2022).

Another pivotal step that contributes to a sustainable workplace is encouraging cross-generational teams, which promote the exchange of diverse perspectives and skills (Shaheen & Zeba, 2020). In fact, according to Říhová et al. (2019), this not only enhances innovation but also nurtures an inclusive work environment where individuals feel valued and integral to the organization's success. Another context in which diversity management strategies could promote sustainability is technological

adaptation; indeed, there is a line of research aimed at exploring the enhancing or inhibiting variables that influence older workers' successful acceptance of technological innovations. Providing support for technological acceptance seems to be crucial for ensuring that all employees, regardless of age, feel confident and proficient in using the tools essential for their roles (Schlichter & Nielsen, 2022; Sundermeier et al., 2020; Tiwari & Raju, 2022). In fact, on the one hand, senior workers often bring a wealth of experience, skills, and institutional knowledge, which can contribute significantly to innovation and problem-solving (Gomez & Bernet, 2019); on the other hand, they may encounter unique obstacles associated with adapting to rapidly evolving work environments, such as the digital transformation, and navigating intergenerational dynamics.

Furthermore, the increasing prevalence of technostress, anxiety, and discomfort stemming from the pervasive use of technology in contemporary work settings has raised concerns about its impact on the mental and emotional well-being of older employees (Nimrod, 2018; Turner et al., 2007); at the same time, there is some evidence showing a positive willingness of older workers toward innovative technologies (Fasbender et al., 2023). For example, it is the case of those technologies that may support workers in reducing their workload or job demands (Damman, 2016; Nagarajan & Sixsmith, 2023). On the other side, some authors stated that older workers have only two possible chances in front of technological innovations: undergoing an upskills training process or considering an early retirement (Komp-Leukkunen, 2023).

AIM OF THE STUDY

Starting from these premises, this article delves into the multifaced relationship between age diversity management and techno-complexity at work, suggesting that a key role can be played by a supportive work environment.

While there has been a growing focus on promoting age diversity in the workplace and its potential benefits (Boehm & Kunze, 2014; Li et al., 2021; Ries et al., 2013; Schneid et al., 2016), such as improved performance and innovation, there has been comparatively a gap in how age diversity management influences the employees' adaptation to technology. So, this paper aims to address the lack of extensive research in this area, trying to understand how age diversity management practice is linked to the acceptability of new technologies at work. Given the increasing reliance on technology in the modern workplace (Oeij et al., 2023; Rasool et al., 2022), examining its role in age diversity management is essential to comprehensively address its impact on employees. In the following sections, we explore these themes in depth, presenting a comprehensive analysis of age diversity management, the significance of colleagues' support networks, and the pressing issue of technostress in contemporary workplaces. The synthesis of research findings will offer a comprehensive understanding of the challenges and opportunities associated with managing different generations of workers.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

DEFINITION OF "AGE DIVERSITY CLIMATE"

Age Diversity Climate is a comprehensive concept that encapsulates the organizational culture, attitudes, and practices regarding age-related diversity within the workplace (Avanzi et al., 2012; Profili et al., 2017). It reflects the extent to which an organization recognizes, values, and supports workers across all age groups in its workforce. This climate is not limited to policies and formal programs but includes the unwritten and implicit norms and behaviors exhibited by employees and management (Fantinelli et al., 2022; Ingusci, 2018; Zacher & Yang, 2016).

A positive Age Diversity Climate is characterized by an inclusive atmosphere where individuals of all ages are respected and appreciated for their unique contributions. In such environments, senior workers are viewed as valuable assets with a wealth of experience, skills, and insights to offer. They feel valued, empowered, and confident in their ability to contribute effectively to the organization (Al Doghan et al., 2019). Research consistently demonstrates that a positive Age Diversity Climate can

yield numerous benefits, such as (1) increased job satisfaction, (2) improved motivation, and (3) optimized performance. Concerning the job satisfaction of employees, when senior workers perceive that their organization values their presence and contributions, they tend to report higher levels of job satisfaction (Madera et al., 2016). This sense of recognition fosters a positive work experience, which can enhance their overall job satisfaction (McKay et al., 2011; Mickson et al., 2021; Polat et al., 2017). Regarding motivation, the literature underlines that a workplace that actively promotes age diversity tends to have a more optimistic and cohesive workforce (Polat et al., 2017). Senior workers, in particular, benefit from a supportive environment that boosts their morale and motivation (Kunze & Toader, 2019). Finally, an Age Diversity Climate that encourages the exchange of ideas and perspectives across generations can lead to improved problem-solving, innovation, and decision-making (Kunze et al., 2013). This, in turn, positively impacts the organization's overall performance and competitiveness (Boehm & Kunze, 2014).

Conversely, a negative or unsupportive Age Diversity Climate can have detrimental effects on employees and the organization. When workers perceive age-related biases or stereotypes, they may feel marginalized, excluded, and disengaged. This can lead to (1) feelings of exclusion, which can erode workers' sense of belonging (senior workers, in particular, might feel like they don't fit into the workplace culture or that their contributions are undervalued) (Sousa et al., 2019; Yang & Matz-Costa, 2018); (2) engagement reduction – in a hostile age diversity climate, employees may become disengaged, leading to decreased productivity and potentially even early retirement or turnover (Kunze et al., 2011); and (3) a negative impact on performance, according to which a lack of support and recognition can hinder senior workers' performance and limit their willingness to share their expertise and knowledge with the organizations (Mothe & Nguyen-Thi, 2021). The following section analyzes the phenomenon of technostress and its implication for age diversity management.

TECHNOSTRESS IN AN AGE-DIVERSE WORKFORCE

The term "technostress" has gained prominence in recent years as workplaces have become increasingly reliant on technology and digital tools (Oeij et al., 2023). It refers to the psychological and emotional strain experienced by individuals due to their use of technology, particularly when it exceeds their ability to cope with it effectively (Borle et al., 2021; Molino et al., 2020; Rohwer et al., 2022). Those challenges and demands that are able to cause technostress were defined by Ragu-Nathan et al. (2008) as technostress creators. More specifically, there were identified five stressors (or technostress creators): techno-complexity, techno-invasion, techno-insecurity, techno-uncertainty, and techno-overload (Ragu-Nathan et al., 2008; Tarafdar et al., 2019). Techno-complexity refers to new technologies that challenge users with a massive effort to learn and apply them. Organizations are interested in gaining a competitive advantage through technological systems and tools; however, this constant race to keep up with the times often comes at the expense of the workers. Employees thus face the need to update their digital skills, which can lead to decreased performance and increased stress levels (Nastjuk et al., 2024). When the technology used at work invades personal life spaces, it is referred to as techno-invasion. In this case, workers experience stress as the technology appears to intrude on and violate their private lives (Tarafdar et al., 2011, 2019). Techno-insecurity refers to situations where workers feel that their job roles are threatened by technology. In other words, their fears are manifold: being replaced by personnel with more advanced digital skills, their positions becoming obsolete due to technological advancements, or even their roles being supplanted by a technological entity, such as a robot or artificial intelligence (Califf et al., 2020). When workers are unable to keep up with frequent and sudden technological updates, a situation of techno-uncertainty is observed. The need for continuous updating of knowledge and skills can be a source of stress (Califf et al., 2020). Techno-overload occurs in cases where workers are driven by technology to work faster. The overload also refers to situations where technology causes repeated interruptions to work processes (e.g., the arrival of messages or emails), resulting in workers experiencing stress in resuming interrupted tasks (Tarafdar et al., 2011).

It is known that employees of different ages have distinct experiences with technology. Younger employees often adapt more quickly to new technologies due to exposure from an early age, while older employees may struggle more with digital tools, leading to technostress. Moreover, in an age-diverse workplace, the speed of technological adoption varies, and this mismatch can create frustration, inefficiencies, or stress in adapting to these rapid transitions (Yener et al., 2021; Zhao et al., 2022). In this perspective, an environment that doesn't support age diversity may exacerbate this issue, as different needs and capabilities are not adequately addressed.

Furthermore, without an inclusive climate that bridges the communication gaps in how different generations understand and implement technologies, employees may feel alienated or pressured to keep up with unfamiliar technology, leading to technostress. In contrast, a well-managed age diversity climate can reduce disparities by fostering cross-generational mentoring and collaborative learning, alleviating the stress associated with technology for all age groups, and reducing its negative consequences.

Indeed, technostress can manifest as anxiety, burnout, and reduced job satisfaction, but also as absenteeism (D. G. Kim & Lee, 2021) and turnover (Boyer-Davis, 2019; Harris et al., 2022). So, understanding how technostress, in particular techno-complexity, affects senior workers is vital for organizations seeking to optimize their workforce's well-being and productivity, limiting counterproductive behaviors while ensuring sustainable employment practices.

The negative impacts of technostress on senior workers in an age-diverse workforce can vary. They might include a sense of anxiety and frustration experienced by senior workers when they encounter steep learning curves associated with new technologies (Nedeljko et al., 2024; Nimrod, 2022). In this case, the pressure to adapt quickly can be overwhelming, leading to stress. Moreover, a relevant phenomenon is digital overload: the constant barrage of emails, messages, and notifications can be overwhelming for anyone, particularly for senior workers, who are probably less accustomed to managing digital information (Fleischer & Wanckel, 2024). Even the issue of technological discrepancies is of a certain importance because this can lead senior workers to feelings of inadequacy or a sense of falling if compared with more tech-savvy employees. Finally, it is worth mentioning the issues of security concerns and resistance to change. According to the first one, older workers may be more concerned about cybersecurity and privacy issues (Mittal, 2024), especially if they perceive themselves as less knowledgeable about online security practices. With respect to the second one, resistance to adopting new technologies can further exacerbate technostress because some senior workers may be resistant to change due to a fear of making mistakes or a perceived threat to their job security (Galanti et al., 2023).

So, the consequences of technostress among senior workers can be significant. It can lead to reduced job satisfaction, decreased productivity, and even physical health issues (La Torre et al., 2019), such as headaches and sleep disturbances. Additionally, the stress associated with technology can impact overall well-being and job performance. In this negative scenario, age diversity management seems to be a factor able to contain the negative consequences of technostress on worker's well-being.

Numerous studies highlight the importance of a positive age diversity climate in mitigating technostress among older employees. For instance, Wang et al. (2023) found that organizations with inclusive age diversity climates tend to have lower reported levels of technostress among senior workers. These organizations actively encourage cross-generational collaboration, creating a sense of camaraderie that helps older employees adapt to technological changes more comfortably. Conversely, when an organization lacks a supportive age diversity climate, the negative effects of technostress can be amplified. A study by Ali et al. (2020) demonstrated that senior workers in such environments are more likely to experience higher levels of technostress, which, in turn, leads to reduced job satisfaction and diminished job performance. Other evidence has highlighted that just one technostress creator was massively significant impacting older workers, that was techno-complexity (Marchiori et al., 2019), according to the literature and considering techno-complexity as one of the most impacting

stressors for older workers as its characteristics are linked to aging at work, we developed the first hypothesis of the study:

H1. A positive age diversity climate is negatively associated with techno-complexity at work.

We expect that organizations that promote an aging-friendly environment can implement policies and practices that help mitigate techno-complexity among older workers. However, given the cross-sectional design, we only observe this association rather than establish a causal effect.

ROLE OF COLLEAGUES' SUPPORT

Colleagues' support encompasses a multitude of ways in which co-workers extend assistance, foster collaboration, and create an atmosphere of camaraderie (Ervin & Jeffery, 2015; Riley et al., 2021). This support network is particularly vital for workers, as it directly influences their integration, job satisfaction, and overall quality of work life.

A central dimension of colleagues' support is its capacity to facilitate the integration of senior and younger workers into the workforce, for example, by fostering mentorship relationships. In fact, with their depth of experience, senior employees can serve as invaluable mentors to their younger counterparts (Bergelson, 2014; Ivey & Dupré, 2022). In this perspective, colleagues' support networks seem to facilitate the establishment of mentorship connections, offering opportunities for professional growth and development that benefit both the mentor and the mentee. Moreover, colleagues' support serves as a conduit for the seamless transfer of invaluable industry-specific knowledge and expertise held by senior workers. Younger colleagues can tap into this wealth of insights and experiences, resulting in a direct impact on the organization's performance and competitive edge (Fuertes et al., 2013; Naegele et al., 2011; von Bonsdorff et al., 2018).

However, in the current context, there are organizational dimensions in which it is the younger workers who could take on the role of teachers and mentors for their more senior colleagues, as is the case with digital skills (Baran, 2014; McCosker et al., 2023).

The rapid evolution of technology and the digital landscape has created, in fact, a situation where younger employees often possess advanced digital competencies that may be unfamiliar to some senior workers. In this scenario, it would be advantageous for younger employees to take on the role of mentors, guiding their senior colleagues in mastering the digital tools and skills required in the modern workplace.

This role reversal not only could foster cross-generational collaboration but also underscores the importance of a reciprocal learning environment (Lyons & Bandura, 2022). It highlights that colleagues' support is a dynamic and evolving concept that adapts to the changing needs and strengths of the workforce, regardless of age. As such, it becomes a valuable resource for organizations striving to leverage the full potential of their multigenerational teams to promote better performance and well-being at work.

Regarding performance improvement, it is well known that teams that harness workers' diverse experiences and perspectives tend to excel in their performance, bring innovative solutions, and take on more challenges (Garcia Martinez et al., 2017; Tshetshema & Chan, 2020). Furthermore, colleagues' support can also be a force for resolving conflicts, offering guidance, and fostering a harmonious work environment conducive to productivity (H. S. Kim et al., 2022; Mellor et al., 2020).

For what concerns satisfaction and well-being promotion, the literature underlined that colleagues' support significantly contributes to emotional well-being. The knowledge that a supportive network exists to lean on during times of stress or personal challenges can alleviate anxiety and help preserve mental health – a crucial aspect of maintaining overall work satisfaction.

Colleagues' support networks have the power to open doors for both senior and younger workers in terms of career development. Recommendations, introductions, and advocacy from colleagues can amplify prospects for advancement or new opportunities within the organization. Furthermore, such

support networks contribute to the cultivation of a culture deeply rooted in inclusivity and respect – a culture that transcends age, underlining the organization's commitment to diversity and the value it places on the contributions of all its members.

In line with these premises, we developed the following hypotheses relating to the relationship between aging climate, colleagues' support, and techno-complexity.

H2. An aging climate is associated with greater colleagues' support.

We suggest that an aging-friendly workplace climate might foster an atmosphere of respect and appreciation for individuals of all ages. In such an environment, senior employees – who often possess a wealth of experience, skills, and insights – may be appreciated as valuable mentors and contributors, while younger employees who tend to be more technologically savvy and more open to change could share their expertise. This mutual respect and appreciation may be connected to higher levels of colleague support.

H3. Colleague support is associated with lower levels of techno-complexity.

In line with the second hypothesis, we believe that higher levels of colleagues' support, especially when it involves guidance, training, and assistance with technology-related challenges, could be related to lower levels of technostress among employees. In particular, feelings of frustration and anxiety related to techno-complexity may be lower when they can be alleviated by colleagues providing support in dealing with technology issues.

H4. The relationship between an aging climate and workers' techno-complexity may be explained by colleagues' support.

We believe that organizations that invest in fostering a positive age diversity climate and encourage colleagues' support could mitigate the negative effects of techno-complexity. Recognizing that senior workers are valuable assets means actively creating an environment that facilitates their successful adaptation to evolving workplace technologies. In this perspective, we hypothesized that the aging climate could reduce the level of techno-complexity both directly (Hypothesis 1) and indirectly: a positive and supportive work environment could foster a sense of camaraderie and teamwork, which could buffer the negative effects of techno-complexity and provide employees with the resources they need to navigate the digital demands of the modern workplace more effectively. In this way, colleagues' support has the potential to mediate the negative relationship between the aging climate and techno-complexity.

MATERIALS AND METHODS

SAMPLE AND PROCEDURE

A cross-sectional design was adopted to collect data through an online questionnaire implemented on the Qualtrics platform. From April to May 2023, the authors sent the questionnaire to the entire population of an Italian multinational company operating in the metalworking sector and manufacturing machines. Prior to participation, participants were comprehensively informed about the processing of personal data and their anonymity in accordance with EU regulation 2016/679. The study adhered to the Declaration of Helsinki of 1995 (and subsequent revisions), and all ethical guidelines were followed for conducting human research, including adherence to legal requirements where the study was conducted. Participants provided their informed consent prior to completing the anonymous questionnaire. It is crucial to note that no medical treatments, invasive diagnostics, or procedures that cause psychological or social discomfort were administered to the participants. Therefore, no additional ethical approval beyond our adherence to established ethical guidelines was deemed necessary. A total of 160 Italian employees (68 women and 92 men) actively participated in the questionnaire. The age range of participants spanned from 22 to 65 years, with a mean age of 43.5 years (11.07 SD). The questionnaire was developed specifically for this study. It included items aimed at collecting

socio-demographic information addressing gender, age, work role, tenure, educational qualification (Table 1), and sub-scales aimed at measuring study variables (Diversity Climate, Perceived Colleagues Support, and Technostress).

Table 1. Socio-demographic characteristics of the sample

	Level	Frequencies	% of total	Total
Gender	Male	92	57.5%	160
	Female	68	42.5%	160
Age	20-65			160
Status	Single	49	30.6%	160
	Cohabiting, married	103	64.4	160
	Separated, divorced	8	5%	160
Children	Yes	91	56.9%	160
	No	69	43.1	160
Children <12	Yes	57	62.6%	91
	No	34`	37.4%	91
Education	High school diploma	93	59.2%	157
	Bachelor's degree	25	15.9%	157
	Master's degree	5	3.2%	157
	Doctorate	1	0.6%	157

MEASURES

Constructs were assessed with relatively concise questionnaire scales to minimize the time and effort required by participating employees. Participants provided their responses on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). In order to evaluate the cross-cultural validity of the scales, the Diversity Climate Perception Scale of McKay et al. (2011) and the Perceived Colleagues Support Scale of Ng and Sorensen (2008) were initially translated into Italian, with a focus on preserving item meanings and cultural relevance. To ensure the face and content validity of the translations, two researchers independently back-translated the Italian version into the original language, ensuring that the items maintained their intended meanings. Furthermore, correlations with established measures were conducted, all of which aligned with the expected direction, and the reliability of all the scales used in the questionnaire was verified.

Diversity climate perception

Diversity climate perceptions are defined as "employees' shared perceptions that an employer utilizes fair personnel practices and socially integrates underrepresented employees into the work environment" and were measured using a 4-item scale developed by McKay et al. (2011). The items included, "I trust the company to treat me fairly," "The company maintains a diversity-friendly work environment," "The company respects the views of people like me," and "Top leaders demonstrate a visible commitment to diversity." Higher scores indicated that participants perceived that their organization fostered an inclusive work environment and maintained a positive climate for diversity through utilizing fair personnel practices. Cronbach's α for this scale was .77, indicating good reliability.

Perceived colleagues support

Perceived co-worker support is defined as employees' beliefs of the extent to which their co-workers provide work-related and emotional assistance (Ng & Sorensen, 2008) and is measured with a 4-item scale developed by Ladd and Henry (2000). Sample items included "My co-workers are willing to listen to my personal problems" and "My co-workers help me carry out my work activities." Higher

scores indicated that participants felt more cared for and supported by their co-workers. Cronbach's α for this scale was .86, indicating high reliability.

Techno-complexity

The techno-complexity dimension of technostress was measured with the Italian version of the sub-scale of the Technostress Creators Scale, edited by Molino et al. (2020), and consisted of four items. An example of an item is "I don't know enough about technology to handle my work satisfactorily." Cronbach's α for this scale was .81, indicating high reliability. The techno-complexity subscale was chosen exclusively because it represents one of the most critical dimensions of technostress, especially in modern work contexts where technology is omnipresent. This dimension captures the perception of difficulty and complexity related to the use of technology, which can significantly affect well-being and work performance.

DATA ANALYSIS

Data analyses were performed using IBM SPSS, Version 26 (SPSS Statistics for Windows, Version 26). We computed descriptive statistics, such as the mean and standard deviation for each scale, assessed the data normality using skewness and kurtosis values, and conducted bivariate correlation analyses to examine the relationships between different scales. Finally, we tested the study model using Model 4 of the PROCESS Macro for SPSS. Figure 1 exemplifies the model assumed.
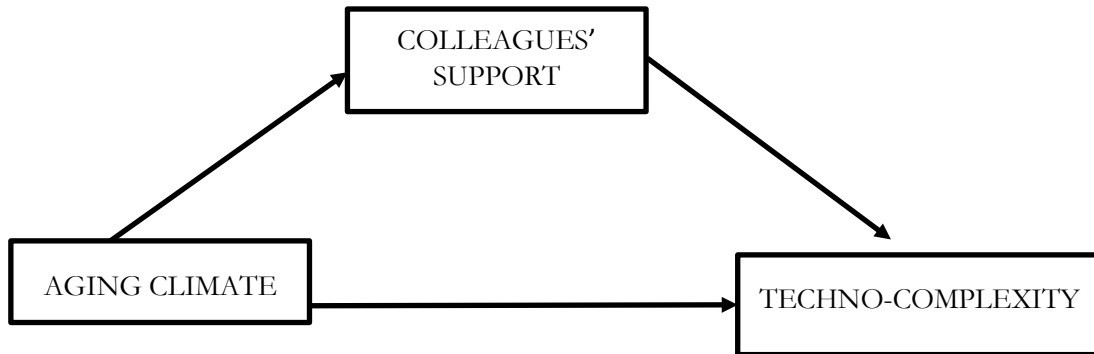

Figure 1. Graphical depiction of the hypothesized model

RESULTS

DESCRIPTIVE STATISTICS

We calculated descriptive statistics and bivariate correlations for each study scale. Additionally, we evaluated the normality of the data by examining the skewness and kurtosis values for each scale. The results showed that the skewness and kurtosis values for all variables were within the acceptable range of ±1, indicating that the distribution of characteristics across the variables was within the parameters of normality. Table 2 presents the results of these analyses.

**Table 2. Means, standard deviations, skewness,
kurtosis and correlations between the study variables**

Variable	Mean	SD	Asymmetry	Kurtosis	Shapiro-Wilk		2	3
					W	p		
1. Aging climate	4.51	1.33	-0.3498 (0.199)	-0.407 (0.396)	0.980	0.026	-0.194*	0.347 **
2. Techno-complexity	2.60	0.94	-0.0931 (0.200)	-0.207 (0.397)	0.976	0.011		-0.247 **
3. Colleagues support	3.45	0.85	0.3172 (0.199)	-0.410 (0.395)	0.970	0.003		

Note: * p < 0.05; ** p < 0.01

The preliminary analysis did not reveal significant differences in the relationship between workers' ages and the variables investigated. The small sample size and the homogeneity of the sample may have contributed to the absence of notable differences. However, it is reasonable to assume that there are far stronger theoretical and contextual reasons able to explain this result. First, according to the literature, technostress, aging climate, and colleague support are phenomena primarily influenced by organizational factions and subjective perception rather than demographic characteristics such as age. Technostress, for instance, depends more on perceived competence, exposure to technology, and the support provided by the work environment than on the worker's age. So, people, regardless of age, can perceive technostress similarly when exposed to compatible working conditions (Marchiori et al., 2019). Aging climate refers to a shared organizational perception regarding age-based inclusion or discrimination. This perception is experienced by all workers regardless of their age, as it relates to the organizational context rather than individual characteristics.

Finally, colleague support tends to be a function of interpersonal dynamics and the general team climate rather than being influenced by the specific age or workers. Previous studies suggest that social support at work is perceived relatively uniformly across different age groups, as it depends more on group norms and company policies than on the age of individuals (Nimrod, 2018; Spiess et al., 2021).

MODEL TESTING

After the mentioned analyses, we computed the model test to evaluate if the results supported our hypothesized model. The model results, depicted in Figure 2, show that aging climate was, contrarily to expectations, not related to technostress (β=0.05, p=0.23, 95% CI [-0.15, 0.03] H1 not supported) but positively related to colleagues' support (β= 0.23 p <.001, 95% CI [0.12, 0.30], H2 supported).

Colleagues' support was negatively related to techno-complexity (β= -0.14 p= 0.03, 95% CI [-0.28, -0.50]; H3 supported). Finally, the supposed mediation of colleagues' support between aging climate and techno-complexity (H4) was supported (β= 0.03, p=0.05 95% CI [-0.067, -0.001]).

Tables 3 and 4 show the mediation and path estimates of the model tested.

Table 3. Mediation estimates

Effect	Label	Estimate	SE	95% confidence interval		Z	P	% mediation
				Lower	Upper			
Indirect	a × b	-0.0324	0.0173	-0.0696	-4.644	-1.87	0.061	37.0
Direct	c	-0.0551	0.0475	-0.1494	0.03684	-1.16	0.246	63.0
Total	c + a × b	-0.0875	0.0426	-0.1723	-0.00863	-2.06	0.040	100.0

Table 4. Path estimates

			Label	Estimate	SE	95% confidence interval		Z	P
						Lower	Upper		
AG_CLIMA	→	SUP_COLL	a	0.2171	0.0480	0.117	0.30780	4.52	<0.001
SUP_COLL	→	Techno-complexity	b	-0.1494	0.0719	-0.283	-0.00190	-2.08	0.038
AG_CLIMA	→	Techno-complexity	c	-0.0551	-0.0475	-0.149	0.03684	-1.16	0.246

DISCUSSION

The aging of the global workforce introduces both opportunities and challenges in the pursuit of sustainable careers. This study investigated the interplay between aging climate, colleagues' support, and techno-complexity in the workplace, revealing both supportive and unexpected findings, prompting a discussion of the implications and possible explanations for sustainable career development. Contrary to our initial expectations, the analysis did not yield a significant relationship between the promotion of an aging climate and lower levels of techno-complexity among employees. This result is open to several considerations. First, the phenomenon of technostress is multifaceted, encompassing a range of psychological and emotional responses to technology use. This is influenced by various factors, such as the complexity of digital tools or the constantly evolving digital work environment. Several studies (Molino et al., 2020; Srivastava et al., 2015) have highlighted that technostress is not a monolithic construct but involves distinct dimensions such as overload, invasion, and uncertainty. So, the failure to find a direct link between the aging climate and techno-complexity may be attributed to this intricate nature of technostress. Second, individual differences (attitudes, perceptions, coping mechanisms) could play a significant moderating role in shaping the experience of techno-complexity; for example, older workers, despite potential stereotyping, may exhibit diverse technological skills and attitudes. Strictly related to the concept of a supportive work environment, we found, according to the literature (Converso et al., 2018), a positive relationship between the promotion of an aging climate and increased colleagues' support. This result suggests that organizations fostering an environment that values age diversity and inclusion may also cultivate positive colleague relationships. In particular, the recognition of the expertise of senior employees and the collaboration between different generations may contribute to a supportive atmosphere, which is crucial in addressing challenges related to technology and, more in general, innovation in the workplace. In fact, according to North and Fiske (2015), workplaces that are able to promote recognition of senior workers and collaboration have been consistently associated with positive outcomes, particularly in the context of technology adoption and adaptation. Several studies support the idea that a supportive atmosphere generated by acknowledging the skills of older workers can significantly impact the overall organizational climate, influencing employee attitudes and well-being (Harvey, 2012; Lefter et al., 2011). In this context, effective age diversity management strategies contribute to the cultivation of a workplace culture that supports diversity in experiences, perspectives, and approaches to work. So, integrating age diversity into broader diversity and inclusion initiatives becomes pivotal not only for the benefits of a varied workforce but also to fortify the foundations of sustainability, well-being, and resilience across different generations of employees. Furthermore, intergenerational knowledge transfer is critical for organizational learning and development. Older workers often possess tacit knowledge and insights gained through years of experience. So, facilitating collaboration between generations allows for the transfer of this valuable knowledge to younger employees, especially towards technological advancements (Nurhas et al., 2021; Pershina et al., 2019). Knowledge management and the transformation of implicit knowledge in shared and collective competence and experience are added values that can nurture support and a positive and innovative organizational climate (Rousseau, 1989). Moreover, the recognition of expertise contributes to the fulfillment of the psychological contract between employees and the organization (Ramírez et al., 2011). From this perspective, when organizations honor the implicit promises made by employees, such as acknowledging their skills and providing opportunities for growth, it strengthens the psychological contract and, in turn, enhances organizational commitment and loyalty (Fantinelli et al., 2023), even toward technological acceptation and advancements. The analysis also revealed a negative relationship between colleagues' support and techno-complexity. This implies that as colleague support increases, techno-complexity tends to decrease. The finding underscores the crucial role of supportive social interactions in managing and alleviating techno-complexity. Colleagues support can manifest in various forms, such as guidance, training, and assistance. The implication is that when colleagues provide support, whether through mentoring, sharing expertise, or helping with technical challenges, individuals are better equipped to cope with the psychological strain associated with technology-related

issues. This support system becomes instrumental in mitigating the adverse effects that technostress can have on individuals' well-being. Furthermore, the study reveals an additional significant finding related to the mediating role of colleagues' support in the relationship between aging climate and techno-complexity. The study suggests that the aging climate may not directly affect techno-complexity levels. Instead, its influence is exerted indirectly through the enhancement of colleagues' support. This implies that a positive aging climate within the organization can contribute to fostering supportive social interactions among colleagues (Bonaiuto et al., 2022), which in turn helps mitigate the adverse effects of techno-complexity. In other words, creating a positive environment for aging employees (e.g., through inclusive policies or supportive cultural attitudes) indirectly contributes to reducing techno-complexity by promoting a stronger support network among colleagues. However, due to the cross-sectional nature of the study, these results should be interpreted as correlational rather than causal.

LIMITS, IMPLICATIONS, AND FUTURE DIRECTIONS

The study, while contributing valuable insights, is not without its limitations, which warrant careful consideration. First, the use of self-report data introduced the possibility of biases, such as social desirability and common method variance, which could affect the reliability of the results. Second, the relatively small sample size, although reflective of the specific population studied, limits the statistical power of the analyses, and future research should aim to include larger and more diverse samples. Furthermore, the exclusion of the variable "age" from the main model, while theoretically justified, may limit the ability to explore potential age-related differences in the examined relationships. Another limitation lies in the focus on a single dimension of technostress (techno-complexity), leaving out other relevant dimensions that could offer a more comprehensive understanding of technostress. Last, the adoption of a cross-sectional design restricts the ability to establish causal relationships among variables, and the focus on a specific Italian multinational company raises concerns about the generalizability of the findings beyond the metalworking sector. Future research endeavors should aim for diverse contexts and longitudinal designs to deepen our understanding of these complex dynamics. Nevertheless, our results are open to a series of implications and future directions. First, the unexpected finding regarding the direct relationship between the aging climate and technostress calls for a deeper exploration of the intricacies involved. Future studies could delve into specific organizational contexts, technological demands, and individual differences that may modulate this relationship. Additionally, practical implications suggest that organizations should adopt a holistic approach to address technostress. While creating an age-friendly climate is crucial in terms of promoting diversity and inclusion and accommodating the unique needs of aging employees, organizations must also recognize the significance of building robust colleague support networks. Relying solely on an age-friendly climate, in fact, may not suffice, as our findings suggest. Moreover, in the contemporary landscape, where agile work methods like remote or hybrid working are increasingly prevalent, there is an additional layer of complexity. These new ways of working, while offering flexibility and efficiency, also pose the risk of social isolation. Colleagues may find themselves physically distant, relying heavily on digital communication tools. This shift in work dynamics necessitates a proactive approach to maintain and strengthen colleague connections (Toscano et al., 2022). This involves implementing strategies that promote regular and meaningful communication, virtual team-building activities, and platforms for informal interactions. Additionally, organizations must implement comprehensive training programs to address the challenges posed by new technologies. These programs should be tailored to employees of different age groups and technological proficiencies, ensuring that both younger and older employees feel supported in using digital tools. Such training can help mitigate technostress by building employees' confidence in their ability to navigate new technologies effectively. Mentoring and reverse mentoring programs, which have been shown to benefit both junior and senior employees, can also complement this approach. Mentoring allows younger employees to gain valuable insights and experience from their senior counterparts, while reverse mentoring enables senior employees to learn about new technologies and contemporary work practices from their younger colleagues. This bidirectional flow of knowledge not only enhances skills but fosters a

culture of mutual respect and understanding. Finally, organizations should develop employer branding strategies rooted in the principles of diversity and inclusion. These strategies are particularly appealing to younger employees who value workplaces that prioritize equality and inclusivity. By promoting a diverse and inclusive brand, companies can attract top talent from various backgrounds, which in turn drives innovation and performance (Galanti & Fantinelli, 2024). Effective communication is also crucial in addressing generational stereotypes. This should involve workshops, seminars, and campaigns designed to educate both young and senior employees about the value of diversity and the importance of challenging preconceived notions.

CONCLUSION

This study provides valuable insights into the complex dynamics between the aging climate, colleagues' support, and technostress. It emphasized the importance of considering not only the direct effects of organizational factors but also their indirect influences through social dynamics and support structures within the workplace. Understanding these dynamics is valuable for organizations aiming for a holistic approach to promoting employee well-being in the ever-evolving digitalized workplace.

REFERENCES

Al Doghan, M. A., Bhatti, M. A., & Juhari, A. S. (2019). Do psychological diversity climate, HRM practices, and personality traits (Big Five) influence multicultural workforce job satisfaction and performance? Current scenario, literature gap, and future research directions. *Sage Open, 9*(2). https://doi.org/10.1177/2158244019851578

Ali, M. O., Tawfeq, A. O., & Dler, S. M. (2020). Relationship between diversity management and human resource management: Their effects on employee innovation in the organizations. *Black Sea Journal of Management and Marketing, 1*(2), 36-44. https://doi.org/10.47299/bsjmm.v1i2.61

Allen, J., Alpass, F. M., Szabó, Á., & Stephens, C. V. (2021). Impact of flexible work arrangements on key challenges to work engagement among older workers. *Work, Aging and Retirement*, *7*(4), 404-417. https://doi.org/10.1093/workar/waab010

Appannah, A., Meyer, C., Ogrin, R., McMillan, S., Barrett, E., & Browning, C. (2017). Diversity training for the community aged care workers: A conceptual framework for evaluation. *Evaluation and Program Planning*, *63*, 74-81. https://doi.org/10.1016/j.evalprogplan.2017.03.007

Avanzi, L., Cortini, M., & Crocetti, E. (2012). When age matters: The role of teacher aging on job identity and organizational citizenship behaviours. *Revue Internationale de Psychologie Sociale*, *25*(3-4), 179-210.

Backes-Gellner, U., & Veen, S. (2013). Positive effects of ageing and age diversity in innovative companies – Large-scale empirical evidence on company productivity. *Human Resource Management Journal*, *23*(3), 279-295. https://doi.org/10.1111/1748-8583.12011

Baran, M. (2014). Mutual mentoring as a tool for managing employees of different generations in the enterprise. *Journal of Positive Management*, *5*(2), 20-29. https://doi.org/10.12775/JPM.2014.010

Bergelson, M. (2014). Developing tomorrow's leaders: Innovative approaches to mentorship. *People and Strategy*, *37*(2), 18-22.

Boehm, S. A., & Kunze, F. (2014). Age diversity and age climate in the workplace. In P. Bal, D. Kooij, & D. Rousseau (Eds.), *Aging workers and the employee-employer relationship* (pp. 33-55). Springer. https://doi.org/10.1007/978-3-319-08007-9_3

Bonaiuto, F., Fantinelli, S., Milani, A., Cortini, M., Vitiello, M. C., & Bonaiuto, M. (2022). Perceived organizational support and work engagement: The role of psychosocial variables. *Journal of Workplace Learning*, *34*(5), 418-436. https://doi.org/10.1108/JWL-11-2021-0140

Borle, P., Reichel, K., Niebuhr, F., & Voelter-Mahlknecht, S. (2021). How are techno-stressors associated with mental health and work outcomes? A systematic review of occupational exposure to information and

communication technologies within the technostress model. *International Journal of Environmental Research and Public Health*, *18*(16), 8673. https://doi.org/10.3390/ijerph18168673

Boyer-Davis, S. (2019). Technostress: An antecedent of job turnover intention in the accounting profession. *Journal of Business and Accounting*, *12*(1), 49-63.

Burkey, R. C. (2022). *Integrating action learning and knowledge transfer within an age-diverse workplace: A phenomenological study* [Doctoral dissertation, The Pennsylvania State University]. https://www.proquest.com/openview/ce5a33ea1a8d4655869d0ca8c80e8bf2/1?pq-origsite=gscholar&cbl=18750&diss=y

Burmeister, A., De Meulenaere, K., Li, Y., Pfrombeck, J., & Truxillo, D. M. (2020). Knowledge is key: Unlocking the positive effects of age diversity in organizations. *Academy of Management Proceedings*, 16832. https://doi.org/10.5465/AMBPP.2020.16832symposium

Califf, C. B., Sarker, S., & Sarker, S. (2020). The bright and dark sides of technostress: A mixed-methods study involving healthcare IT. *MIS Quarterly, 44*(2), 809-856. https://doi.org/10.25300/MISQ/2020/14818

Converso, D., Sottimano, I., Guidetti, G., Loera, B., Cortini, M., & Viotti, S. (2018). Aging and work ability: The moderating role of job and personal resources. *Frontiers in Psychology*, *8*, Article 2262. https://doi.org/10.3389/fpsyg.2017.02262

Damman, M. (2016). Blended work and employment participation of older workers: A further discussion. *Work, Aging and Retirement, 2*(4), 384-389. https://doi.org/10.1093/workar/waw022

De Meuse, K. P., Hostager, T. J., & O'Neill, K. S. (2007). A longitudinal evaluation of senior managers' perceptions and attitudes of a workplace diversity training program. *People and Strategy*, *30*(2), 38.

Ervin, K. E., & Jeffery, V. (2015). Do peer leaders in the workplace improve implementation of self-management support training? *Asia Pacific Journal of Health Management*, *10*(2), 52-57. https://doi.org/10.24083/apjhm.v11i2.177

Fantinelli, S., Di Fiore, T., Marzuoli, A., & Galanti, T. (2022). Self-perceived employability of workers with disability: A case study in an educational farm. *Frontiers in Psychology*, *13*, 871616. https://doi.org/10.3389/fpsyg.2022.871616

Fantinelli, S., Galanti, T., Guidetti, G., Conserva, F., Giffi, V., Cortini, M., & Di Fiore, T. (2023). Psychological contracts and organizational commitment: The positive impact of relational contracts on call center operators. *Administrative Sciences*, *13*(4), 112. https://doi.org/10.3390/admsci13040112

Fasbender, U., Gerpott, F. H., & Rinker, L. (2023). Getting ready for the future, is it worth it? A dual pathway model of age and technology acceptance at work. *Work, Aging and Retirement, 9*(4), 358-375. https://doi.org/10.1093/workar/waac035

Ferdous, T., Ali, M., & French, E. (2023). Use of flexible work practices and employee outcomes: The role of work–life balance and employee age. *Journal of Management & Organization*, *29*(5), 833-853. https://doi.org/10.1017/jmo.2020.44

Fleischer, J., & Wanckel, C. (2024). Job satisfaction and the digital transformation of the public sector: The mediating role of job autonomy. *Review of Public Personnel Administration*, 44(3), 431-452. https://doi.org/10.1177/0734371X221148403

Fuertes, V., Egdell, V., & McQuaid, R. (2013). Extending working lives: Age management in SMEs. *Employee Relations*, *35*(3), 272-293. https://doi.org/10.1108/01425451311320477

Galanti, T., & Fantinelli, F. (2024). Managing the future of talents: Digital innovation in learning organization. *The Leaning Organization*. Advance online publication. https://doi.org/10.1108/TLO-06-2023-0096

Galanti, T., Ferrara, B., Benevene, P., & Buonomo, I. (2023). Rethinking the unthinkable: A Delphi study on remote work during COVID-19 pandemic. *Social Sciences*, *12*(9), 497. https://doi.org/10.3390/socsci12090497

Garcia Martinez, M., Zouaghi, F., & Garcia Marco, T. (2017). Diversity is strategy: The effect of R&D team diversity on innovative performance. *R&D Management*, *47*(2), 311-329. https://doi.org/10.1111/radm.12244

Gerpott, F. H., Lehmann-Willenbrock, N., Wenzel, R., & Voelpel, S. C. (2019). Age diversity and learning outcomes in organizational training groups: The role of knowledge sharing and psychological safety. *The International Journal of Human Resource Management*, *32*(18), 3777-3804. https://doi.org/10.1080/09585192.2019.1640763

Gomez, L. E., & Bernet, P. (2019). Diversity improves performance and outcomes. *Journal of the National Medical Association*, *111*(4), 383-392. https://doi.org/10.1016/j.jnma.2019.01.006

Harris, K. J., Harris, R. B., Valle, M., Carlson, J., Carlson, D. S., Zivnuska, S., & Wiley, B. (2022). Technostress and the entitled employee: Impacts on work and family. *Information Technology & People, 35*(3), 1073-1095. https://doi.org/10.1108/ITP-07-2019-0348

Harvey, J.-F. (2012). Managing organizational memory with intergenerational knowledge transfer. *Journal of Knowledge Management, 16*(3), 400-417. https://doi.org/10.1108/13673271211238733

Ingusci, E. (2018). Diversity climate and job crafting: The role of age. *The Open Psychology Journal, 11*, 105-111. https://doi.org/10.2174/1874350101811010105

Ivey, G. W., & Dupré, K. E. (2022). Workplace mentorship: A critical review. *Journal of Career Development, 49*(3), 714-729. https://doi.org/10.1177/0894845320957737

Kadam, R., Rao, S. A., Abdul, W. K., & Jabeen, S. S. (2020). Diversity climate perceptions and its impact on multicultural team innovation and performance. *Measuring Business Excellence, 24*(3), 301-318. https://doi.org/10.1108/MBE-04-2019-0037

Kim, D. G., & Lee, C. W. (2021). Exploring the roles of self-efficacy and technical support in the relationship between technostress and counter-productivity. *Sustainability, 13*(8), 4349. https://doi.org/10.3390/su13084349

Kim, H. S., Kim, M., & Koo, D. (2022). From teamwork to psychological well-being and job performance: The role of CSR in the workplace. *International Journal of Contemporary Hospitality Management, 34*(10), 3764-3789. https://doi.org/10.1108/IJCHM-11-2021-1426

Komp-Leukkunen, K. (2023). A life-course perspective on older workers in workplaces undergoing transformative digitalization, *The Gerontologist, 63*(9), 1413–1418. https://doi.org/10.1093/geront/gnac181

Kunze, F., Boehm, S. A., & Bruch, H. (2011). Age diversity, age discrimination climate and performance consequences – A cross organizational study. *Journal of Organizational Behavior, 32*(2), 264-290. https://doi.org/10.1002/job.698

Kunze, F., Boehm, S., & Bruch, H. (2013). Organizational performance consequences of age diversity: Inspecting the role of diversity-friendly HR policies and top managers' negative age stereotypes. *Journal of Management Studies, 50*(3), 413-442. https://doi.org/10.1111/joms.12016

Kunze, F., & Toader, A. F. (2019). Lifespan perspectives on organizational climate. In B. B. Baltes, C. W. Rudolph, & H. Zacher (Eds.), *Work across the lifespan* (pp. 561-580). Academic Press. https://doi.org/10.1016/B978-0-12-812756-8.00024-4

Ladd, D., & Henry, R. A. (2000). Helping co-workers and helping the organization: The role of support perceptions, exchange ideology, and conscientiousness. *Journal of Applied Social Psychology, 30*(10), 2028-2049. https://doi.org/10.1111/j.1559-1816.2000.tb02422.x

La Torre, G., Esposito, A., Sciarra, I., & Chiappetta, M. (2019). Definition, symptoms and risk of technostress: A systematic review. *International Archives of Occupational and Environmental Health, 92,* 13-35. https://doi.org/10.1007/s00420-018-1352-1

Lefter, V., Brătianu, C., Agapie, A., Agoston, S., & Orzea, I. (2011). Intergenerational knowledge transfer in the academic environment of knowledge-based economy. *Amfiteatru Economic Journal, 13*(30), 392-403.

Li, Y., Gong, Y., Burmeister, A., Wang, M., Alterman, V., Alonso, A., & Robinson, S. (2021). Leveraging age diversity for organizational performance: An intellectual capital perspective. *Journal of Applied Psychology, 106*(1), 71-91. https://doi.org/10.1037/apl0000497

Lyons, P., & Bandura, R. (2022). Manager in coaching role and reciprocal learning. *Journal of Workplace Learning, 34*(1), 27-40. https://doi.org/10.1108/JWL-04-2021-0037

Madera, J. M., Dawson, M., & Guchait, P. (2016). Psychological diversity climate: justice, racioethnic minority status and job satisfaction. *International Journal of Contemporary Hospitality Management, 28*(11), 2514-2532. https://doi.org/10.1108/IJCHM-06-2015-0304

Marchiori, D. M., Mainardes, E. W., & Rodrigues, R. G. (2019). Do individual characteristics influence the types of technostress reported by workers? *International Journal of Human-Computer Interaction, 35*(3), 218-230. https://doi.org/10.1080/10447318.2018.1449713

McCosker, A., Critchley, C., Walshe, J., Tucker, J., & Suchowerska, R. (2023). Accounting for diversity in older adults' digital inclusion and literacy: The impact of a national intervention. *Ageing & Society, 43*(11), 2629-2649. https://doi.org/10.1017/S0144686X21001550

McKay, P. F., Avery, D. R., Liao, H., & Morris, M. A. (2011). Does diversity climate lead to customer satisfaction? It depends on the service climate and business unit demography. *Organization Science, 22*(3), 788-803. https://doi.org/10.1287/orsc.1100.0550

Mellor, N. J., Michaelides, G., Karanika-Murray, M., Vaillant, D., & Saunder, L. (2020). Social support as protective factor of the effects of part-time work on psychological health: A moderated mediation model. *International Journal of Workplace Health Management, 13*(5), 497-511. https://doi.org/10.1108/IJWHM-12-2019-0159

Mickson, M. K., Anlesinya, A., & Malcalm, E. (2021). Mediation role of diversity climate on leadership and job satisfaction in the Ghanaian public sector. *World Journal of Entrepreneurship, Management and Sustainable Development, 17*(2), 167-188. https://doi.org/10.1108/WJEMSD-10-2019-0080

Mittal, C. (2024). An empirical study on cybersecurity awareness, cybersecurity concern, and vulnerability to cyber-attacks. *International Journal of Scientific Research and Management, 12*(4), 1144-1158. https://doi.org/10.18535/ijsrm/v12i04.ec05

Molino, M., Ingusci, E., Signore, F., Manuti, A., Giancaspro, M. L., Russo, V., & Cortese, C. G. (2020). Well-being costs of technology use during Covid-19 remote working: An investigation using the Italian translation of the technostress creators scale. *Sustainability, 12*(15), 5911. https://doi.org/10.3390/su12155911

Mothe, C., & Nguyen-Thi, T. U. (2021). Does age diversity boost technological innovation? Exploring the moderating role of HR practices. *European Management Journal, 39*(6), 829-843. https://doi.org/10.1016/j.emj.2021.01.013

Naegele, G., Walker, A., Malloch, M., Cairns, L., Evans, K., & O'Connor, B. N. (2011). Age management in organisations in the European Union. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *The SAGE handbook of workplace learning* (pp. 251-267). Sage. https://doi.org/10.4135/9781446200940.n18

Nagarajan, N. R., & Sixsmith, A. (2023). Policy initiatives to address the challenges of an older population in the workforce. *Ageing International, 48*, 41-77. https://doi.org/10.1007/s12126-021-09442-w

Nastjuk, I., Trang, S., Grummeck-Braamt, J.-V., Adam, M. T. P., & Tarafdar, M. (2024). Integrating and synthesising technostress research: A meta-analysis on technostress creators, outcomes, and IS usage contexts. *European Journal of Information Systems, 33*(3), 361-382. https://doi.org/10.1080/0960085X.2022.2154712

Nedeljko, M., Gu, Y., & Bostan, C. M. (2024). The dual impact of technological tools on health and technostress among older workers: An integrative literature review. *Cognition, Technology & Work, 26*(1), 47-61. https://doi.org/10.21203/rs.3.rs-2978100/v1

Ng, T. W., & Sorensen, K. L. (2008). Toward a further understanding of the relationships between perceptions of support and work attitudes: A meta-analysis. *Group & Organization Management, 33*(3), 243-268. https://doi.org/10.1177/1059601107313307

Nimrod, G. (2018). Technostress: Measuring a new threat to well-being in later life. *Aging & Mental Health, 22*(8), 1086-1093. https://doi.org/10.1080/13607863.2017.1334037

Nimrod, G. (2022). Technostress in a hostile world: Older internet users before and during the COVID-19 pandemic. *Aging & Mental Health, 26*(3), 526-533. https://doi.org/10.1080/13607863.2020.1861213

North, M. S., & Fiske, S. T. (2015). Modern attitudes toward older adults in the aging world: A cross-cultural meta-analysis. *Psychological Bulletin, 141*(5), 993-1021. https://doi.org/10.1037/a0039469

Nurhas, I., Geisler, S., & Pawlowski, J. (2021). Developing a competency framework for intergenerational startup innovation in a digital collaboration setting. *Proceedings of the International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management* (pp. 110-118). SciTePress. https://doi.org/10.5220/0010652100003064

Oeij, P. R. A., Hulsegge, G., & van der Torre, W. (2023). The impact of technology on work: Enabling workplace innovation by technological and organisational choice. In P. R. A. Oeij, S. Dhondt, & A. J. McMurray (Eds.), *A research agenda for workplace innovatio*n (pp. 67-90), Edward Elgar Publishing. https://doi.org/10.4337/9781800881945.00013

Pershina, R., Soppe, B., & Thune, T. M. (2019). Bridging analog and digital expertise: Cross-domain collaboration and boundary-spanning tools in the creation of digital innovation. *Research Policy, 48*(9), 103819. https://doi.org/10.1016/j.respol.2019.103819

Polat, T., Bal, P. M., & Jansen, P. G. W. (2017). How do development HR practices contribute to employees' motivation to continue working beyond retirement age? *Work, Aging and Retirement, 3*(4), 366-378. https://doi.org/10.1093/workar/wax007

Profili, S., Innocenti, L., & Sammarra, A. (2017). A conceptual framework of age diversity climate. In S. Profili, A. Sammarra, & L. Innocenti (Eds.), *Age diversity in the workplace*, *Vol. 17* (pp. 95-116). Emerald Publishing Limited. https://doi.org/10.1108/S1877-636120170000017006

Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information Systems Research, 19*(4), 417–433. https://doi.org/10.1287/isre.1070.0165

Ramírez, A. M., Morales, V. J. G., & Rojas, R. M. (2011). Knowledge creation, organizational learning and their effects on organizational performance. *Engineering Economics, 22*(3), 309-318. https://doi.org/10.5755/j01.ee.22.3.521

Rasool, T., Warraich, N. F., & Sajid, M. (2022). Examining the impact of technology overload at the workplace: A systematic review. *Sage Open, 12*(3). https://doi.org/10.1177/21582440221114320

Riach, K. (2009). Managing 'difference': Understanding age diversity in practice. *Human Resource Management Journal, 19*(3), 319-335. https://doi.org/10.1111/j.1748-8583.2009.00096.x

Ries, B. C., Diestel, S., Shemla, M., Liebermann, S. C., Jungmann, F., Wegge, J., & Schmidt, K. H. (2013). Age diversity and team effectiveness. In C. Schlick, E. Frieling, & J. Wegge (Eds.), *Age-differentiated work systems* (pp. 89-118). Springer. https://doi.org/10.1007/978-3-642-35057-3_5

Říhová, L., Písař, P., & Havlíček, K. (2019). Innovation potential of cross-generational creative teams in the EU. *Problems and Perspectives in Management, 17*(4), 38-51. https://doi.org/10.21511/ppm.17(4).2019.04

Riley, R., Kokab, F., Buszewicz, M., Gopfert, K. T. A., Van Hove, M., Taylor, A. K., Teoh, K., Martin, J., Appleby, L., & Chew-Graham, C. (2021). Protective factors and sources of support in the workplace as experienced by UK foundation and junior doctors: A qualitative study. *BMJ Open, 11*(6), e045588. https://doi.org/10.1136/bmjopen-2020-045588

Rohwer, E., Flöther, J. C., Harth, V., & Mache, S. (2022). Overcoming the "dark side" of technology – A scoping review on preventing and coping with work-related technostress. *International Journal of Environmental Research and Public Health, 19*(6), 3625. https://doi.org/10.3390/ijerph19063625

Rousseau, D. M. (1989). Psychological and implied contracts in organizations. *Employee Responsibilities and Rights Journal, 2*, 121-139. https://doi.org/10.1007/BF01384942

Sarkar, A. (2022). Designing diversity training program for business executives. *Industrial and Commercial Training, 54*(1), 1-16. https://doi.org/10.1108/ICT-07-2020-0091

Schlichter, B. R., & Nielsen, I. J. (2022). Diversity of seniority in a digital innovation challenge experiment. *Procedia Computer Science, 196*, 142-150. https://doi.org/10.1016/j.procs.2021.11.083

Schneid, M., Isidor, R., Steinmetz, H., & Kabst, R. (2016). Age diversity and team outcomes: A quantitative review. *Journal of Managerial Psychology, 31*(1), 2-17. https://doi.org/10.1108/JMP-07-2012-0228

Shaheen, M., & Zeba, F. (2020). Cross-generational engagement strategies. In M. Gupta (Ed.), *Management practices for engaging a diverse workforce: Tools to enhance workplace culture* (pp. 157-182). Apple Academic Press Inc. https://doi.org/10.1201/9780367808419-6

Sousa, I. C., Ramos, S., & Carvalho, H. (2019). Age-diversity practices and retirement preferences among older workers: A moderated mediation model of work engagement and work ability. *Frontiers in Psychology*, *10*, 1937. https://doi.org/10.3389/fpsyg.2019.01937

Spiess, T., Ploder, C., Bernsteiner, R., & Dilger, T. (2021). Technostress in the workplace: Triggers, outcomes, and coping strategies with a special focus on generational differences. *International Journal of Web Engineering and Technology*, *16*(3), 217-234. https://doi.org/10.1504/IJWET.2021.119875

Srivastava, S. C., Chandra, S., & Shirish, A. (2015). Technostress creators and job outcomes: Theorising the moderating influence of personality traits. *Information Systems Journal, 25*(4), 355-401. https://doi.org/10.1111/isj.12067

Stavrou, E., & Anastassiadou, M. (2022). Flexible work arrangements and diversity through a comparative and multilevel lens. In S. Bertolini, & B. Poggio (Eds.), *Research handbook on work-life balance: Emerging issues and methodological challenges* (pp. 237-257). Edward Elgar Publishing. https://doi.org/10.4337/9781788976053.00023

Sundermeier, J., Birkner, S., Ettl, K., Kensbock, J., & Tegtmeier, S. (2020). Hello diversity! Opportunities and challenges of entrepreneurial diversity in the digital age. *Communications of the Association for Information Systems, 47*, 697-715. https://doi.org/10.17705/1CAIS.04732

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*(6), 6-42. https://doi.org/10.1111/isj.12169

Tarafdar, M., Tu, Q., Ragu-Nathan, T. S., & Ragu-Nathan, B. S. (2011). Crossing to the dark side: Examining creators, outcomes, and inhibitors of technostress. *Communications of the ACM*, *54*(9), 113–120. https://doi.org/10.1145/1995376.1995403

Tiwari, S., & Raju, T. B. (2022). Management of digital innovation. In G. Singh, V. Garg, & R. Goel (Eds.), *Promoting inclusivity and diversity through Internet of Things in organizational settings* (pp. 128-149). IGI Global. https://doi.org/10.4018/978-1-6684-5575-3.ch007

Toscano, F., Zappalà, S., & Galanti, T. (2022). Is a good boss always a plus? LMX, family-work conflict, and remote working satisfaction during the COVID-19 pandemic. *Social Sciences, 11*(6), 248. https://doi.org/10.3390/socsci11060248

Tshetshema, C. T., & Chan, K. Y. (2020). A systematic literature review of the relationship between demographic diversity and innovation performance at team-level. T*echnology Analysis & Strategic Management, 32*(8), 955-967. https://doi.org/10.1080/09537325.2020.1730783

Turner, P., Turner, S., & Van de Walle, G. (2007). How older people account for their experiences with interactive technology. *Behaviour & Information Technology*, *26*(4), 287-296. https://doi.org/10.1080/01449290601173499

von Bonsdorff, M. E., Zhou, L., Wang, M., Vanhala, S., von Bonsdorff, M. B., & Rantanen, T. (2018). Employee age and company performance: An integrated model of aging and human resource management practices. *Journal of Management, 44*(8), 3124-3150. https://doi.org/10.1177/0149206316662314

Wang, H., Ding, H., & Kong, X. (2023). Understanding technostress and employee well-being in digital work: The roles of work exhaustion and workplace knowledge diversity. *International Journal of Manpower, 44*(2), 334-353. https://doi.org/10.1108/IJM-08-2021-0480

Yang, J., & Matz-Costa, C. (2018). Age diversity in the workplace: The effect of relational age within supervisor–employee dyads on employees' work engagement. *The International Journal of Aging and Human Development, 87*(2), 156-183. https://doi.org/10.1177/0091415017709798

Yener, S., Arslan, A., & Kilinç, S. (2021). The moderating roles of technological self-efficacy and time management in the technostress and employee performance relationship through burnout. *Information Technology & People, 34*(7), 1890-1919. https://doi.org/10.1108/ITP-09-2019-0462

Zacher, H., & Yang, J. (2016). Organizational climate for successful aging. *Frontiers in Psychology*, 7, 1007. https://doi.org/10.3389/fpsyg.2016.01007

Zhao, G., Wang, Q., Wu, L., & Dong, Y. (2022). Exploring the structural relationship between university support, students' technostress, and burnout in technology-enhanced learning. *The Asia-Pacific Education Researcher*, *31*(4), 463-473. https://doi.org/10.1007/s40299-021-00588-4

AUTHORS

Teresa Galanti is a junior assistant professor in Work and Organizational Psychology at the University of Chieti. Her main research interests are related to safety management, talent management and development, and digital transition at work.

Stefania Fantinelli is an assistant professor in Work and Organizational Psychology at the E-Campus University (Rome, Italy). Her main research interests are related to organizational behavior and the impact of technology on working life on both individual and collective dimensions.

Veronica Giffi is a PhD student in Work and Organizational Psychology at the University of Chieti-Pescara. Her main research interests include aging climate and organizational well-being.

Michela Cortini is a full professor of Work and Organizational Psychology at the University of Chieti. She has authored approximately 60 publications focusing on the theme of Organizational Psychology, including Intangible Assets, Human Resources, and Intellectual Capital.