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The adoption of artificial intelligence in the workplace: impacts on job security and workers' well-being.

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SUMMARY

ABSTRACT

In the context of digital transformation, which is profoundly redefining organizational structures and ways of working, it becomes essential to understand the impact of artificial intelligence (AI) on workers' subjective experience. This research analyses the relationship between AI adoption, perceived job security, and Work-Related Quality of Life (WRQoL), with a specific focus on the mediating role of technostress. Moving beyond deterministic or purely technocratic views of automation, the study adopts a perspective oriented towards investigating how technology is internalized and experienced in real organizational contexts.

The results, obtained through a quantitative methodology, indicate that the adoption of AI can contribute to enhancing perceptions of stability and well-being, especially when technology is interpreted as an enabling resource and not as a replacement factor. However, these positive effects are partially mitigated by the increase in technostress, which emerges as a critical psychological condition, capable of generating anxiety, cognitive overload and a sense of inadequacy.

The implications for organizational practices are relevant: in order to promote a sustainable adoption of AI, it is necessary to accompany innovation with continuous training interventions aimed at developing digital self-efficacy, structured policies for preventing distress and active listening systems for workers. Furthermore, AI must be designed and governed according to principles of transparency, participation and explainability in order to strengthen organizational trust, a sense of agency and professional dignity. Technological innovation ultimately requires a human-centered vision: only by integrating skills, well-being, and inclusion will it be possible to build a future of work that combines digital progress and social sustainability.

CHAPTER 1
INTRODUCTION

1.1. Background

In recent years, the adoption of Artificial Intelligence (AI) has transformed the workplace landscape, profoundly influencing how organizations operate and organize themselves, and consequently the experiences of workers. This marks the beginning of a new industrial revolution, the fourth, which is expected to have a significant impact on various sectors globally (Xu, David, & Kim, 2018). That revolution is characterized by the connection between the physical and digital worlds, seeking to improve what are the interactions between humans and machines and promoting the automation of processes and tasks through the integration of smart machines and advanced software (Ibarra, Ganzarain, & Igartua, 2018). Indeed, it has transformed the labor landscape in recent times, profoundly influencing the way organizations operate and organize themselves, and consequently the experiences of workers.

Artificial intelligence, has its roots in various disciplines such as philosophy, mathematics, psychology and neuroscience, and today, when understood as the ability of machines to perform tasks that would normally require human intelligence, has found application in various sectors, from healthcare to finance, from manufacturing to services (Ibarra, Ganzarain, & Igartua, 2018).

The ultimate purpose of the latter is for machines to have mental capabilities similar to those of humans, but to be more operationally efficient (Misselhorn, 2018). For this reason, artificial intelligence is increasingly being integrated into the world of work, especially in companies, to improve task execution and performance (Lee, Davari, Singh, & Pandhare, 2018); it encompasses computer systems and applications that include machine learning, soft computing, fuzzy logic systems, intelligent robots and virtual realities (Pereira, Hadjielias, Christofi, & Vrontis, 2023).

This technological evolution, driven by artificial intelligence, has led to an increasing automation of processes, profoundly transforming the world of work. Many job roles have undergone radical changes, even losing their traditional characteristics, while others tend to disappear completely, replaced by increasingly sophisticated systems. In this context, the skills required not only change, but become more transversal and oriented towards greater collaboration between people and technologies, requiring flexibility and the ability to adapt to changing scenarios.

Therefore, while on one hand, automation offers unprecedented opportunities including: improving efficiency, reducing costs and increasing productivity, companies can optimize their operations, freeing up human resources for more strategic and creative activities, while ensuring greater consistency in the quality of products and services offered. On the other hand, crucial questions arise regarding the perceived job stability of employees and their well-being in the new working environment. As a matter of fact, with the introduction of advanced technologies, many workers are faced with uncertainty regarding their job security. Consequently, this fear that machines may replace their roles generates anxiety and worry, negatively affecting morale and motivation. Moreover, changing job roles requires employees to adapt quickly to new skills and tasks, a process that can be stressful and challenging. In this context, where knowledge about these new dynamics dictated by the impending technological transition is still limited, it is crucial to explore how automation not only transforms business dynamics, but also how it affects the quality of working life. This thesis therefore sets out to analyze these very aspects in depth, studying how the impact of the adoption of artificial intelligence positively and negatively affects the perceived safety of workers and their quality of working life, also mediating these relationships with the introduction of the 'stress' variable associated with this change in work habits.

1.2. Problem discussion

The adoption of artificial intelligence (AI) in the workplace marks an epochal transformation, with complex implications that go far beyond the mere automation of tasks. While tangible benefits are often celebrated, such as improved efficiency, optimized decision-making processes, and reduced operational costs (Pereira,

Hadjielias, Christofi, & Vrontis, 2023); (Nazareno & Schiff, 2021), growing concerns are emerging regarding its side effects, particularly on workers' well-being and the perceived stability of their roles. The current scenario reveals significant tension between technological progress and the adaptability of human resources, requiring a critical and balanced reflection.

Indeed, recent studies, such as those by Bruun and Duka (2018), point out that the impact of artificial intelligence (AI) on the future of employment presents radically different characteristics than previous technological revolutions. Through a scenario planning exercise, the authors identify three possible trajectories for the evolution of the labor market by 2038: Stalemate, Check and Checkmate.

In the first scenario (Stalemate), the adoption of AI does not significantly alter the world of work, allowing society to maintain its economic and employment structures without substantial changes. The second scenario (Check) predicts that although AI will replace many jobs, the economy will be able to adapt, creating new opportunities and stabilizing after a turbulent transition phase. The third scenario (Checkmate), on the other hand, represents an extreme risk picture: automation will overtake the adaptive capacity of economies and institutions, leading to massive technological unemployment and social instability.

Unlike previous innovations, such as the steam engine or electricity, which while replacing certain tasks historically created new industries and job opportunities, artificial intelligence has an unprecedented scope (Bruun & Duka, 2018). AI is capable of simultaneously automating a wide range of both manual and cognitive tasks, including non-routine tasks that were hitherto considered the exclusive preserve of humans (Autor, Levy, & Murnane, 2003).

This capability stems from a unique combination of hardware improvements (related to the exponential growth predicted by Moore's Law) and algorithmic advancements that have made it possible to process complex data and handle variable tasks (Fallows, 2011).

AI represents the first truly “universal technology”, capable of transversal insertion in all sectors and occupational levels, with a speed of evolution that is likely to exceed the adaptability of both people and (Brynjolfsson & McAfee, 2011). This means that, unlike the industrial revolutions of the past, which reduced the number of jobs in

certain sectors, such as agriculture, but created them in others industry, services), AI could simultaneously erode jobs on a large scale, without guaranteeing an immediate balance between job destruction and job creation.

A crucial element of the reflection is that even highly skilled and cognitive jobs, such as those related to diagnostic medicine, law or finance, are today exposed to automation, thanks to the development of algorithms capable of performing analysis, prediction and decision-making tasks. Concrete examples are the use of AI for reading medical reports (IBM Watson) or for legal research (Symantec Clearwell).

Finally, Bruun and Duka (2018), point out that ignoring the possibility of a Checkmate scenario, even if its probability was low, would be a strategic mistake. Indeed, in a risk management logic, the potential impact of massive technological unemployment is so high that preventive solutions, such as universal basic income and massive retraining programs, need to be planned to ensure social cohesion and future economic sustainability.

In fact, one of the most controversial aspects of AI is its impact on job security. Several studies highlight that the growing spread of automation and intelligent technologies has amplified the phenomenon of cognitive insecurity, defined as the perception of vulnerability regarding the stability of one's employment (Gull, Ashfaq, & Aslam, 2023); (Sverke, Hellgren, & Näswall, 2002). This feeling is particularly acute among workers employed in low-specialization roles or characterized by repetitive activities, sectors that are highly susceptible to automation (Frey & Osborne, 2017). For instance, Frey and Osborne (2017) estimate that approximately 47% of jobs in the United States are at risk of automation, a figure that underscores the urgency of developing strategies to mitigate these anxieties.

Similarly, workers' psychological and physical well-being is threatened by factors such as increased stress, reduced perceived autonomy, and the erosion of the sense of meaning linked to their work (Nazareno & Schiff, 2021); (Brougham & Haar, 2018). Technological innovations can indeed generate a paradox: on the one hand, they free workers from repetitive tasks, enabling them to focus on creative and strategic activities; on the other hand, they introduce new forms of pressure, such as the need to quickly acquire advanced digital skills and adapt to rapidly changing work environments (Brynjolfsson & McAfee, 2014); (Pereira, Hadjielias, Christofi, &

Vrontis, 2023) . This phenomenon, known as “cognitive overload,” has been associated with increased stress and a decline in job satisfaction (Nazareno & Schiff, 2021).

Another crucial element is the impact of AI on professional identity. According to the Social Identity Theory (Turner & Tajfel, 1979), workers tend to build a sense of belonging and meaning through their professional roles. However, the introduction of technologies that replicate or replace these roles can threaten this identity, generating a phenomenon known as “AI identity threat” (Gull, Ashfaq, & Aslam, 2023). This threat not only undermines psychological well-being but can also generate resistance to adopting the technology, hindering digital transformation processes within organizations (Craig & al., 2019).

Despite these risks, understanding the effects of AI remains fragmented. While numerous studies analyze the benefits and costs of intelligent technologies, an integrated vision that allows us to predict and manage long-term consequences, especially on a human level, is lacking (Pereira, Hadjielias, Christofi, & Vrontis, 2023); (Brougham & Haar, 2018). For example, while some research highlights that AI can improve productivity and work quality (Lee, Davari, Singh, & & Pandhare, 2018), others suggest that its negative impact on well-being and motivation may nullify these advantages, especially in the absence of adequate support strategies (Gull, Ashfaq, & Aslam, 2023); (Sverke, Hellgren, & Näswall, 2002).

Finally, the organizational context plays a fundamental role in mediating AI’s impacts. Targeted corporate policies, such as continuous training programs and psychological support initiatives, can mitigate the risks associated with adopting AI while promoting a more sustainable and inclusive transition (Gull, Ashfaq, & Aslam, 2023). However, these strategies are not yet universally adopted, leaving many workers vulnerable to the negative effects of technological transformation.

In conclusion, while AI offers unprecedented opportunities to improve business performance and redefine work processes, its effects on employees' well-being and job security raise fundamental questions. The lack of a clear and comprehensive understanding of its implications calls for critical reflection and concerted action to ensure that AI adoption serves not only organizations but also people.

1.3.Research purpose

The purpose of this thesis is to explore the multifaceted impact of artificial intelligence (AI) adoption on workplace dynamics, with a specific focus on job security, work-related quality of life (WRQoL), and digital stress. By examining the interplay between these variables, the research aims to shed light on how technological advancements influence employees' perceptions, experiences, and overall well-being within organizational settings.

AI adoption, defined as the integration of intelligent tools and systems into organizational processes, has been identified as a critical driver of change in modern workplaces (Sullivan & Wamba, 2024). While these tools promise significant improvements in efficiency, decision-making, and operational flexibility, they also introduce uncertainties related to job stability and digital stressors, such as the pressure to adapt to rapidly evolving technologies (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). This dual nature of AI adoption serves as the foundation for the following hypotheses:

1. H1: The adoption of AI positively influences work-related quality of life (WRQoL), as it enhances productivity and provides opportunities for skill development (Van Laar, Edwards, & Easton, 2007).

2. H2: AI adoption negatively impacts job security, as it raises concerns about the replacement of human roles by automated systems (Frey & Osborne, 2017).

3. H3: Digital stress acts as a mediating variable, exacerbating the negative effects of AI adoption on job security and WRQoL. Specifically, increased technostress due to AI tools correlates with higher levels of job insecurity and decreased employee satisfaction (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007).

The research seeks to understand the balance between the potential benefits of AI, such as enabling employees to focus on strategic tasks, and its challenges, including increased stress and fears of job displacement. By addressing these dimensions, the

study contributes to the growing body of literature on the socio-psychological impacts of technological innovation in the workplace, as called for by recent studies (Nazareno & Schiff, 2021); (Pereira, Hadjielias, Christofi, & Vrontis, 2023).

With these predictions, the study aims to strike a balance between the more pessimistic perspective of AI adoption as a possible disruptor of pre-existing psychological contracts that could cause stress and the more optimistic view of it as an innovative and employee-empowering force. The synthesis of these outcomes is crucial for building meaning on the reason employees psychologically engage to the changes brought by technology.

This has been one of the aims of the thesis: to resolve what is currently lacking within the body of literature. Much has been done towards productivity and organizational level outcomes, but is there enough that captures the employees' perception relating to stress and psychological well-being?

Additionally, the relationship between AI adoption, perceived job security, and work-related quality of life (WRQoL) has rarely been explored, let alone investigated together within a single framework. This study will address that by employing an integrated framework which places technostress at the core of the study.

The contribution of this thesis from a theoretical perspective is its interdisciplinary framework of socio-technical systems theory, cognitive appraisal theory of stress, and organizational behavior models. It provides an account for understanding how an individual and institutional context both exerts and experiences digital transformation in circular ways. It particularly focuses on the concepts of control, psychological safety, adaptive capacity, and their interplay as critical buffers in AI's negative impacts.

At a practical level, the study seeks to provide relevant recommendations for organizational leaders and HR practitioners. Framing the AI adoption dialogue around opportunities or threats enables the identification of specialized programmatic responses, such as training, strategic communication, and well-being policies that enhance human satisfy and organizational effectiveness. These findings also inform policies in the domain of digital literacy, reskilling initiatives, and the establishment of governance guidelines that guide the ethical and equitable use of AI.

Thus, the overarching aim of this thesis is to advance an understanding of AI at the organizational level with an increasing focus on the human aspect. It emphasizes that how well organizations support their employees through change is just as important to the success of digital transformation as the technical prowess of AI systems. Through this way workplaces can be made more robust, inclusive, and psychologically sustainable in addition to being more efficient by striking a balance between creativity and empathy.

CHAPTER 2
LITERATURE REVIEW

2.1. Artificial intelligence and the transformation of employment

Artificial Intelligence (AI) is one of the game changers of our time and is revolutionizing many sectors and the way people work. The European Commission's high-level independent expert group on AI (2019) defines AI as "software (and possibly also hardware) systems, designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information derived from this data and deciding the best action(s) to take to achieve the given goal". This definition shows AI's ability to analyze big data, make informed decisions, and do tasks at unprecedented speed. Unlike regular automation, AI learns from machine learning and powerful algorithms and keeps getting better by itself with no human hands needed for tinkering. The many applications of AI from natural language processing and computer vision to predictive analytics and autonomous systems have made it an essential tool in modern economies with big implications for labor markets and job quality. And AI goes far beyond simple automation and robots that just take on boring tasks and work repetitively. It gets good at making decisions and doing things more efficiently and does some amazing things like greatly improving healthcare services, making tricky financial calculations much faster and easier, and revolutionizing teaching and learning (Manyika, et al., 2017). As technology continues to develop, there's no way of dodging some major changes too. We need to think about both the pros and cons here. With all the ethical bells and whistles around the deployment of AI stuff like the privacy of data, bias in algorithms, and worrying about constant surveillance, governance, and oversight is something vital we think carefully about (Nurski & Hoffmann, 2022). AI is changing not just

occupations but also the general social dynamics and institutional frameworks as it becomes more integrated with our infrastructure. The way artificial intelligence (AI) is altering the nature of jobs in modern economies is driving conversations about technological displacement and the future of labor. One big defining way that AI development happens is that it's growing so quickly and at an incredible rate, which differentiates it from previous big waves of automation. Some studies attribute this trend to the rapid advancement of computer processing power, exemplified by Moore's Law, which predicts a doubling of transistors on integrated circuits every 18 months. This quickening process lets machines handle ever more complicated and flexible job tasks at levels that truly surpass human potential (Bruun & Duka, 2018). As Kurzweil (2000) metaphorically describes, society has entered the "second half of the chessboard, a phase where technological progress outpaces societal adaptation and institutional response. The profound implications of this shift suggest that AI's ability to handle both cognitive and manual work could fundamentally redefine employment structures.

The future of employment in the context of AI advancement can be envisioned through various scenarios. Bruun and Duka (2018) propose three possible outcomes by 2038: the "Stalemate" scenario, where AI's influence remains limited; the "Check" scenario, where technological disruption is offset by economic adaptation and job creation; and the "Checkmate" scenario, characterized by widespread job displacement and social instability. One of the most troubling ones is Checkmate and it paints a dire picture of unemployment taking a huge hit as machines start replacing human workers in many different industries. Supporting this projection, Frey and Osborne (2017) estimate that as many as 47% of jobs in the U.S. might face a very high likelihood of automation in the next 20 years. Positions at the lower income and lower skill levels have the axis point in potential automation. Then the McKinsey Global Institute suggests as many as eight hundred million jobs could be lost to automation by 2030 (McKinsey Global Institute, 2017). That would mean those people can't just fall back on their usual pursuits and some serious reskilling and training would be necessary on the part of those who lose out (Manyika, et al., 2017). Notably, recent developments have seen AI impacting high-skilled, white-collar occupations, including business professionals,

managers, and engineers, contrasting with previous automation waves that primarily affected lower-skilled workers (OECD, 2023).

Addressing these challenges requires forward-thinking policy interventions. Bruun and Duka (2018) suggest an integrated strategy combining universal basic income and comprehensive retraining programs. By decoupling income security from employment and fostering lifelong skill development, societies can shield workers from economic displacement while equipping them to meet evolving labor market demands. Big names in AI like Sam Altman from OpenAI and pioneer Geoffrey Hinton also say the government should give everyone more money to help people who lose jobs because of AI (Business Insider, 2025). The OECD also points out that artificial intelligence is valuable for handling benefits related to low incomes and unemployment assistance. Just like with any kind of advancement, they list benefits along with some risks when considering AI to guide policy. This is new and exciting with AI, but we've got to watch it for unintended consequences too (OECD., 2024). Things have brought home how serious this AI thing is for jobs. For instance, the U.S. government announced recently the downsizing of almost 6,700 employees at the Internal Revenue Service (IRS). That's a little over 8 percent of the workforce. As AI technology adoption grows, this adds up to tasks that used to be handled mostly by those people (The Guardian, 2025). Also, projects like Stargate from OpenAI at Abilene in Texas are big on short-term construction jobs but those benefits take a long vacation, really hollowing out the number of direct jobs in such facilities (The Wall Street Journal, 2025).

AI fundamentally alters the nature and quality of jobs. As Nurski and Hoffmann (2022) make clear, as artificial intelligence steps in and automates jobs through robotic process automation, it transmutes what jobs look like. Parts of what people do kind of get rearranged and the way people bear responsibilities within their jobs changes. Algorithmic management, a specific application of AI, introduces profound changes in job design by automating managerial functions such as task allocation, performance evaluation, and work scheduling. These changes impact how much of an active role workers get to play, utilize their competencies, and use their workload evenly. For instance, algorithm instructions standardize how tasks are done, cutting back on creative thinking that workers could employ otherwise and the chance to truly brainstorm and solve problems creatively as well. Similarly, algorithmic surveillance

and performance assessment systems, while promoting efficiency, often exacerbate workplace stress and diminish job satisfaction due to constant monitoring and data-driven evaluations. The effect of AI on job quality isn’t even across situations, and poorer families and groups are at a heightened level of risk for job sorting into very different types and also poorer working conditions. It's crucial when it comes to things like employees genuinely understanding how to use AI effectively and embracing it. A broad range of issues will arise if employees are just following along and don't truly enjoy what they're getting into. Therefore, it improves things when people are enthusiastic and truly feel like they have a voice in using technology in the workplace. As a result, everyone benefits from a more equitable workplace and more equitable technology. Policymakers and organizational leaders must give ethical AI deployment top priority, stressing openness, equity, and human supervision to protect job quality and foster inclusive growth.

As robots and computers take over mundane and repetitive jobs, there's a greater demand for skills that are a bit fancier and even a bit emotional too as emphasized by OECD in 2023 skills like thinking harder and generating creative sparks. Educational institutions must prioritize curricula that foster digital literacy, critical thinking, and adaptability to prepare students for AI-driven workplaces. When it comes to helping people not only keep up but also really excite the leadership roles that are growing and are a bit more technical and require dabbling in different disciplines, educational programs that last a long time such as lifelong learning and training courses that specialize skills help a huge amount. Bringing together governments, the educational community and the private sector is key to constructing comprehensive training frameworks targeting skill gaps and enhancing resilience among the workforce in an economy that's rapidly becoming managed by artificial intelligence.

2.2. Job security and employment

Workplace safety is a fundamental aspect of employee health and the health of the organization itself and has received attention for a long time. Nowadays, we are going through major changes underlying the structure of our workplaces, in fact: temporary work, automation and artificial intelligence (AI) have transformed casual attitudes

about job security and employment stability. Perceived security about one's job position, can be defined as the degree of stability and continuity that employees believe they have in their employment, and this has a very strong impact on employees' work attitudes, behaviors, performance, and psychological health (Kraimer, Wayne, Liden, & Sparrowe, 2005). This perception of job security consequently increases employees' organizational commitment, confidence, and workplace happiness, while those with job insecurity are more stressed, anxious, and less efficient in performing their tasks (Ashford, Lee, & Bobko, 1989). Job security thus goes far beyond the mere economic aspect as employees tie their identity to the organization they work for. The stability of a future job lays the foundation for people's career growth and development, whereas when the latter is lacking this leads to emotional burnout, lack of motivation, and disengagement from organizational goals. We can therefore say that it has a well-documented influence on employee performance and well-being, and research has shown that perceived job insecurity violates employees' psychological contract based on mutual expectations (Kraimer, Wayne, Liden, & Sparrowe, 2005).

Indeed, without the perception of the redundancy of one's role, the psychological contract of trust and, in particular, mutual obligation breaks down and commitment and performance suffer. This phenomenon is more pronounced in organizations that require many temporary or contingent workers, where we know that full-time employees feel threatened by contingent workers (Davis-Blake, Broschak, & George, 2003). The existence of temporary workers can intensify the feeling of job insecurity, creating an environment that promotes competition and anxiety that destroys teamwork and increases the overall loss of productivity.

In addition, the impact of job insecurity reflects disproportionately on the mental health of individuals and the stress it generates also spills over into personal interactions, financial goals, and life satisfaction. It has been observed that chronic stress sleep problems, irritability, and declining physical health are other signs that confirm a history of work instability.

Concerns about the risk of job loss have increased with structural changes in employment practices and the acceleration of new technologies, especially artificial intelligence. This is because there is a growing fear that the automation of many manual and mental tasks will lead to the loss and widespread relocation of many jobs.

Some studies indicate that AI and robotics might be able to replace a large part of the workforce, especially standardized tasks (Frey & Osborne, 2017). The fear of being fired due to technology adds to cognitive job insecurity, a type of stress resulting from the ambiguity of the existence of future employment (Gull, Ashfaq, & Aslam, 2023). Employees suffering from cognitive job insecurity often reported low levels of well-being, stress, and lower job satisfaction, which illustrates the impact of job instability on mental health (Sverke, Hellgren, & Näswall, 2002). Furthermore, the fear of becoming obsolete due to the arrival of new technologies forces workers to work longer and in an immersive manner in an attempt to prove their worth, however, resulting in burnout and work-life imbalance. The need to continuously improve skills and integrate new technologies is especially stressful for older workers, who are confronted not only with the aforementioned problems but also with digital literacy and the rapidly changing tools of the modern workplace.

Entire functions and job roles may cease to exist, among the professions that will be predominantly automated are those that involve manual operations, data entry, and decisions based on a defined procedure (Frey & Osborne, 2017). In many industries, such as manufacturing, transportation, and services, AI has already proven its superiority over human workers in completing tasks, causing unemployment and layoffs. Furthermore, improvements in natural language processing and machine learning have allowed AI to infiltrate knowledge-based professions, such as legal and finance, as well as more creative fields (Bessen, 2018).

These possibilities outline the widening scope of potential employment threats raised by AI, leading to questions about the importance of human labor and job security in the future.

The most sophisticated AI systems do not just eliminate single tasks, but entire occupational categories. The existence of robotic process automation workflows and AI-based decision-making leads to less human attention to processes, so traditional jobs are dying out, while the new demand is for highly accurate expert computer services (Brynjolfsson & McAfee, 2014).

This change exacerbates the labor market division, which consists of high-skilled, high-paying jobs in AI development and management and an increasing number of low-skilled, low-paying jobs in the gig economy and service sector (Autor, 2015).

These differences in employment and job security exacerbate socioeconomic divides and underscore the need for equal opportunities for training digital skills and comprehensive workforce strategies.

In addition, the link between job security and employee health is shaped by deeper organizational and social boundaries. Companies that fail to provide effective explanations and training about new technologies or staffing changes risk creating even more anxiety and confusion among employees (Greenhalgh & Rosenblatt, 1984). However, taking proactive measures through skill development programs, effective change management, and fostering a positive culture helps reduce the implications of job insecurity, thereby improving employee trust and well-being. Organizations can invest in new internal mobility frameworks that address employee concerns about technological dislocation and, in turn, improve overall organizational stability. Employee assistance programs, career counseling, and mentoring are examples of organizational support systems that aid staff in adjusting to change and uncertainty. Employee engagement with the company and job security can be increased by giving them a say in workforce management and technology adoption decisions.

Job security and other socioeconomic-related job protections contribute to digital inclusion and labor market accessibility. The poor integration of automation and AI transformation in the industry, at best, harms workers who do not have access to sufficient digital skills training or other resources, as they are easily exposed to the risk of exclusion from work (Huisman & Van Dijk, 2020). To address these gaps, collaboration between government officials, schools, and businesses is needed to provide equal opportunities for upskilling and employment. With all societal efforts directed at bridging the existing digital divide and, at the same time, implementing inclusive policies, the negative implications of technological change on employment and job security can be reduced. Workers' organizations, both nationally and globally, have a responsibility to demand policies that protect workers' rights in the context of the digital society. These policies should address abusive employment regulations, provisions for access to continuing education, and restrictions on exploitative gig economy models. It is essential to assume responsibility for maintaining social and economic justice to meet the requirement that technology advancements do not disadvantage any group within the workforce.

2.3. Work-Related Quality of Life (WRQoL)

Easton and Van Laar's (2013) Work-Related Quality of Life (WRQoL) scale represents an important innovation in the assessment of health and well-being in the workplace. This measure assesses the perceived quality of an employee's work life based on six associated psychosocial components, such as: general well-being (GWB), home-work interface (HWI), job and career satisfaction (JCS), job control (CAW), working conditions (WCS), and job stress (SAW). When analyzed together, these factors help capture the interaction between various organizational and individual elements within the workplace. Unlike traditional measures of job satisfaction, emotional well-being, job satisfaction, and environmental characteristics are taken into account in the WRQoL scale (Van Laar, Edwards, & Easton, 2007). This approach is consistent with modern concepts of occupational health psychology, which take a more holistic view of the impact that job demands and individual resources have on work engagement (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Because of these characteristics, the WRQoL scale is easy to use and applicable in a variety of settings, from health care to education or business.

The impact of each dimension of WRQoL on employee well-being is necessary to fully understand that employee experience requires the analysis of well-being about its six subfactors, mentioned earlier, and which we will now analyze in more detail. We start with general well-being (GWB), which broadly encompasses psychological well-being and life satisfaction, recognizing the totality of work and personal well-being (Easton & Van Laar, 2013). Next, we find a home-work interface (HWI), which measures how well the organization assists the employee in managing professional and personal tasks, which is important in reducing work-family conflict and increasing job satisfaction (Greenhaus & Beutell, 1985). Then there is job and career satisfaction (JCS), which concerns employees' satisfaction with their jobs, advancement opportunities, and professional development, all of which affect motivation and retention (Karasek Jr, 1979). Additionally, we have job control (CAW), which refers to a person's self-assessed control over his or her participation in and contribution to decision-making related to work processes, which is critical to developing autonomy and alleviating job stress (Karasek Jr, 1979). In addition, there is the working

conditions factor (WCS), that relates to the perception of safety, availability of resources, and infrastructure within the work environment, which affects productivity and job satisfaction (Spector, 1997). Finally, there is the job stress (SAW) component, which incorporates the constancy of stress experience and the impact of stressful work on performance, where unrelieved stress often results in burnout and reduced performance (Maslach & Leiter, 1997).

As can be seen, the WRQoL scale possesses great strategic value in the intent to improve organizational performance, in fact by using WRQoL as a rating scale an organization can achieve its strategic and social goals more quickly and consistently, plus it provides value in diagnosing and solving problems in the workplace. High WRQoL scores have been shown to correlate positively with job satisfaction, reduced absenteeism, and greater organizational commitment (Van Laar, Edwards, & Easton, 2007). By assessing the six underreporting factors, employers can identify specific problems of concern and design relevant policies to address them, such as work-life balance policies, career advancement opportunities, and mental health support programs (Bakker & Demerouti, 2007). In addition, the WRQoL scale is consistent with modern human resource management approaches, which view staff engagement and well-being as key elements of organizational success (Schaufeli & Salanova, 2010). Employers can enhance their workplace culture, modify work settings to attract and retain diverse staff and boost overall organizational performance by examining and comprehending this data.

The quality of work-life balance is significantly impacted by the potential and problems presented by the corporate use of artificial intelligence (AI) technologies.

Modern automation powered by artificial intelligence interferes with the areas previously illustrated causing significant imbalances that need to be analyzed and understood (Brynjolfsson & McAfee, 2014). On the positive side, automation of some mundane tasks gives employees more time to engage in innovative and strategic activities. AI has the potential to help maintain flexible work locations and schedules, which positively affects the home-work interface (HWI) by giving employees more autonomy in decisions regarding their work schedules and locations (Allen, Golden, & Shockley, 2021); (Allen, Golden, & Shockley, 2021). At the same time, the integration of AI technologies has some negative consequences for general welfare

(GWB) and employment, especially in the case of industries where machines are likely to take the place of human jobs (Frey & Osborne, 2017).

Dependence on algorithm-based management tools is likely to be detrimental to perceived control and encourage work-related monitoring, which could increase stress and lower job satisfaction (Ajunwa, Crawford, & Schultz, 2017). While AI continues to transform employment and a firm's design, matching it with principles of WRQoL will be essential from the perspective of employee wellbeing and sustainable workforce development.

With changes to how people work, emerging gaps and new directions for research on WRQoL should be identified in the future. There is a considerable portion of literature on remote and hybrid models of work which needs understanding the impact of virtual work environments on the various aspects of WRQoL, primarily concerning the home-work interface and control at work (Allen, Golden, & Shockley, 2021). Longitudinal research can shed more light on the impact of various WRQoL determinants on employee engagement and career development over time, thereby supporting more helpful policy and practice within organizations (Taris & Kompier, 2006).

Additionally, as mentioned above, recontextualizing the WRQoL scale for different cultures and economies will increase its usefulness and reach across the globe, facilitating equal workplace conditions for all. Extending the reach of WRQoL research enables new approaches to be created for enhancing well-being and productivity within contemporary work environments.

2.4. Digital Stressors and Psychological Well-being

The rapid development and integration of Information and Communication Technologies (ICTs) in daily working life, in addition to their pervasive role in social and leisure activities, has resulted in a new set of stressors known as "techno-stress," with profound consequences for psychological well-being. Technostress was initially defined as a stress level generated by the individual´s incapacity to adapt or deal with new computer technologies in a healthy manner (Brod, 1984). As digital tools continue to filter into all aspects of daily life, this stress takes the form of technological overload and dependency, inundating cognitive, emotional and social wellbeing.

Rapid technological advancements, increased reliance on digital ecosystems for both work and communication, and the resulting intermingling of professional and social obligations have all contributed to this changing landscape of digital stressors (Ayyagari, Grover, & Purvis, 2011). This constant connectivity as well as expectation of immediate responsiveness creates an always-on culture, contributing to increased levels of anxiety and emotional exhaustion. To this end, Tarafdar et al. (2007), argue that the perception of technostress has become increasingly prevalent over time, encompassing five pervasive aspects of a technology impact in the workplace: techno-overload, techno-invasion, techno-complexity, techno-uncertainty, and techno-insecurity. These dimensions reflect how digital stress from such a wide variety of different sources can impact the well-being of individual employees and the outcomes of their organizations in such a wide variety of ways.

Techno-overload refers to the increased expectations that individuals must work faster and handle more substantial workloads due to the effectiveness and capabilities of digital tools, which in turn create greater role conflict and time pressure (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). Consequently, cognitive fatigue, emotional exhaustion, and job dissatisfaction are often experienced since employees struggle to meet heightened performance expectations. Meanwhile, multitasking demands, digital interruptions incessantly without fail, and information overload at once compound this stress yet simultaneously compromise productivity as well as creative problem-solving ability (Salanova, Llorens, & Cifre, 2013). The term techno-invasion describes how work increasingly intrudes into personal life because of the pervasiveness of digital communication modes and remote working patterns. This encroachment creates an "always on" culture that undermines work-life balance and generates conflict between work and family roles (Ayyagari, Grover, & Purvis, 2011). The long-term effects of techno-invasion include greater anxiety, inability to unplug from work duties, and invasion of personal time, all lead to further emotional exhaustion coupled with lower satisfaction in life (Derks, Bakker, Peters, & van Wingerden, 2015).

Techno-complexity can be defined as the complexity associated with acquiring and managing new technologies, resulting in feelings of inadequacy and cognitive strain, particularly when organizations deploy frequent technological innovations with limited training and support. This dimension particularly has an impact on older

workers or those with lower digital literacy, thereby increasing frustration while decreasing self-efficacy in the workplace (Nimrod, 2018). In addition, constantly changing systems without adequate guidance create uncertainty; this resistance to change further affects job engagement levels and morale. Techno-uncertainty is caused by the rapid rate of technological evolution at which adaptions and learning are required continuously; thus, these conditions create even more unstable and stressful feelings. There is always pressure to learn about new tools and platforms emerging every day that leads to information overload and anxiety about becoming obsolete (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008).

Finally, techno-insecurity refers to the fear of losing a job because of automation and technological advancements, which subsequently creates anxiety and leads to lower job satisfaction as people start worrying about their long-term employability (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). This fear is more pronounced in those industries which are heavily digitized and influenced by artificial intelligence, whereby mundane activities get increasingly automated, thereby jeopardizing one's job stability and career advancement (Frey & Osborne, 2017). And this pervades not only individual well-being but also changes organizational dynamics and productivity. There is ample evidence on the cumulative impact of technostress on role stress; studies have highlighted its linkage with role conflict as well as role overload. Role conflict occurs when employees receive contradictory demands in their roles, whereas role overload originates from an overburdening amount or complexity of tasks for an individual to handle adequately (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008). Both forms of role stress have been associated with adverse psychological effects such as burnout, impaired job performance, and greater turnover intentions.

Moreover, the comprehensive scope of technostress has societal impact that must not be ignored. Gaps in the digital skillsets and the relevant technology boosts the digital gap, where the underserved groups face more hurdles to transition to digital settings (Huisman & Van Dijk, 2020). These gaps create new forms of inequity that heighten the chances of being digitally excluded and receiving fewer chances for professional development as well as social participation. The disparity in the distribution of digital tools and resources increase the social and psychological burden of the underrepresented members of society and deepen social divides further. A

comprehensive response is needed for the implications on psychological well-being from digital stressors, involving at least some organization-level responses as well as personal coping mechanisms. Any organization can greatly lessen the effects of technostress by disseminating much more moderate and supportive work environments and culture, comprehensive digital literacy training, as well as actively promoting partial disengagement of workers with their work through flexible work policies. Developing digital resilience, establishing boundaries for technology usage and other stress alleviation activities are some of the ways to cope with negative consequences of digital stressors on a person's psychological well-being individually.

2.5. The Importance of AI Literacy

The ability to use AI tools in a constructive manner is referred to as AI literacy. Its importance has been growing within contemporary society and AIs are now a part of everyday life. From businesses to educational institutions, healthcare, and even the creative industry, there is a need to not just use but ethically understand, assess, and apply AI tools (Ng, Leung, Chu, & Qiao, 2021). Just like reading, writing, and math, AI literacy is another skill to be mastered if one is to be fully competent in a world dominated by artificial intelligence. Unfortunately, this is just the tip of the iceberg and public knowledge of AI is alarmingly low. Most consumers of AI tools utilize them blindly without understanding their workings or the ethical problems they may pose (Ng & Chu, 2021). AI literacy consists of a few crucial components having the best knowledge of AI, application of AI, evaluation and creation of AI, and addressing ethical issues associated with the AI technology (Ng, Leung, Chu, & Qiao, 2021). The first component, knowing and understanding AI, approximately involves acquiring basic information about AI, machine learning, and even the principles of neural networks. This is quite necessary because people have to know the ways through which AI systems interact with data, identify patterns, and make decisions. Research suggests that teaching AI should commence as early as in K-12-a term used in America and some other countries to denote the education system covering kindergarten up to 12th grade. Starting AI education early ensures AI will be deeply rooted in future generations enabling more citizens to understand the technology as AI becomes more

popular (Ng, Leung, Chu, & Qiao, 2021). At this educational level, teaching AI should not only concern the Artificial Intelligence but also help in solving problems, thinking critically ethically, and provide more real cases to make the teaching more applicable and meaningful.

In addition, being AI literate means possessing knowledge of its development, significant milestones, and increasingly complex integration into social and economic systems. Comprehending the history of AI systems evolution assists people in contextualizing current technologies and evaluating emerging trends to aid and Artificial Intelligence, assessing future strategy frameworks (Ng & Leung, 2021). Additionally, AI Literacy includes interdisciplinary concepts such as statistics, ethics, and computer science as a means to encourage appreciation of the scope and impact of AI technology (Long & Magerko, 2020). Another aspect of AI literacy is comprehension of the various classes of AI, including narrow AI, which is developed to perform a single or few functions, and general AI, which is capable of performing activities that require cognitive functions akin to humans. While most of AI at the moment is considered narrow, the conversation surrounding artificial general intelligence (AGI) and the societal challenges it poses has grown, which is important for educating AI literacy (Ng & Chu, 2021).

Knowledge of how AI contributes to the creation and consumption of information is also included in AI literacy. Deepfake videos and artificially intelligent reporting are examples of AI-generated content that has sparked intense worry about disinformation and online fraud. Deepfakes, which superimpose voices and faces onto video footage using artificial intelligence, can be used as a weapon to fabricate events, mislead the public, and even commit fraud. If left unchecked, AI-generated news articles may rapidly disseminate bias or fictitious stories. With the majority of information being consumed digitally, people need to equip themselves with the ability to analyze and scrutinize AI produced material to tell real content apart from fake (Ng & Chu, 2021). In addition, the role of AI in the recommendation systems of social media, where the AI utilizes information from users to predict what they will most likely interact with, needs to be understood. The public is often unaware that AI plays a role in shaping their interests, opinions, and discourse which leads to the reinforcement of pre-existing notions from filter bubbles and echo chambers (Ng & Chu, 2021). This means that AI

literacy must incorporate media literacy for people to be able to analyze news, identify bias, and find deception in digital content.

The second dimension, which is implementing AI assisted technologies, denotes the degree to which people utilize AI tools in their sphere of everyday living and work. AI-enabled voice assistants and recommendation-based systems as well as AI-enabled automation in the workplaces are all examples that can be used by AI literate people for increasing productivity and creating value. The knowledge gap in AI poses challenges, as people who know very little AI may adapt poorly to changing digital worlds (Ng & Leung, 2021). What further aggravates the problem is the fact that the emerging divide is likely to be accompanied by the unequal flow of chances where skilled AI users dominate the value-creating activities of education, employment, and techno-entrepreneurship and others virtually get locked out from benefiting from AI fueled development. Closing the gap calls for more nuanced thinking about initiatives supporting AI literacy, including advocacy work, grassroot community AI teaching, and state or business-funded employee training programs targeting non-tech professions (Ng, Leung, Chu, & Qiao, 2021). Moreover, there are less visible ways in which AI is changing consumer experiences for the better. For example, automated decision making in finance, AI ad personalized online advertising, and AI-powered price customization reveals how businesses are interacting with clients. Businesses have begun utilizing AI algorithms to study consumer patterns and estimate consumer desires to refine marketing and sales approaches. This form of personalization has its drawbacks as well; AI marketing can manipulate decisions, reinforce spending, and establish psychological addiction towards digital consumption. AI literacy has to ensure that people know when their decisions are being influenced by AI and how to manage their digital identity, control their data disclosure, and avoid unreasonable marketing communications (Ng, Leung, Chu, & Qiao, 2021). AI literacy should also cover how AI assists in predictive analytics utilized by business and government to guess how consumers, crime, and public health will behave in the future. Though predictive AI models can boost efficiency, they also create a number of ethical issues chiefly regarding data privacy, surveillance, and the possibility of discrimination if unchecked (Ng & Leung, 2021).

The ramifications of AI literacy are profoundly societal, including inclusivity, job readiness, and even the proactive management of AI. In the age of automation and artificial intelligence, social acceptance of AI literacy as a critical competency boosts technical empowerment, ethical awareness, and digital self-reliance.

CHAPTER 3
METHODOLOGY

3.1. Project description

This research study aims to investigate how artificial intelligence impacts the perceived job security and work well-being of corporate employees, taking into account another important variable, that of technostress, which will act as a mediator in this analysis. As AI-driven technologies are nowadays increasingly integrated into organizational structures, workflows and decision-making processes, understanding their psychological and professional repercussions is more important than ever (Brynjolfsson & McAfee, 2014). Although on the one hand AI is generally associated with increased productivity, automation of routine tasks and improved strategic performance (Davenport & Ronanki, 2018), on the other hand, as we can well imagine, it introduces new stressors and uncertainties that can affect one's mental health, sense of control and clarity of one's job role (Ayyagari, Grover, & Purvis, 2011).

This digital transformation in the workplace that we are talking about has been accelerated by global trends, most notably the COVID-19 pandemic, which has enabled the introduction and adoption of remote working and the rise of intelligent systems in all kinds of industries and spheres (Waizenegger, McKenna, Cai, & Bendz, 2020). Thus, in this new setting, employees must not only engage with AI tools but also continuously adjust to rapidly evolving technical settings. Opportunities and problems have come with this ongoing evolution; some employees gain from the improved productivity and flexibility, while others may feel overburdened, demoralized, or threatened (Dwivedi & al., 2021).

The purpose of this study is to fill a major gap in the literature about the intricate interactions among the aforementioned factors, including job security, workplace well-being, and AI adoption. This is because although the positive organizational outcomes

of digital tools are well-documented (e.g., improved performance metrics, reduced operating costs, etc.), as far as the psychological mechanisms through which these technologies influence individual employees are concerned, not much has yet been studied (Vial, 2019). In fact, there are not many studies that take these three variables into consideration jointly, and indeed, very often, the emotional stress variable is not even mentioned or taken into account. This study, on the contrary, is based on the technostress framework (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007), which identifies dimensions such as techno-overload, techno-invasion, techno-complexity, and techno-uncertainty as sources of stress in technology-intensive work environments and recognizes their importance and incidence over the other variables, which, if studied alone, would only give partial results (Gaudioso, Turel, & Galimberti, 2017).
We will therefore focus on technostress as a mediating variable, which is able to explain why the impact of AI on work-related outcomes is not uniformly positive. Thus, while AI adoption may increase job security and perceived well-being in some contexts, it may trigger anxiety, resistance to change, and reduced job satisfaction in others (Ayyagari, Grover, & Purvis, 2011), and understanding this tension is crucial in order to develop balanced organizational strategies that promote innovation without neglecting human factors.
Two primary research objectives guide this investigation:

1- To examine how AI adoption affects employees' perceived job security, considering the mediating role of techno-stress. The objective is to assess whether the benefits of AI on job stability are moderated by the stress associated with its implementation and use.
2- Analysing the relationship between AI adoption and work-related quality of life (WRQoL), again through the lens of techno-stress. This includes assessing whether the benefits of AI, such as task simplification, better access to information, or flexible working conditions, are offset by psychological stress, cognitive overload, or work-life imbalance.

This research is based on a multidisciplinary theoretical framework, drawing on organizational psychology, human-computer interaction, and information systems.

These perspectives allow for a nuanced understanding of how AI shapes not only performance metrics, but also employees' experiences, attitudes, performance, and organizational culture.

From a practical perspective, this study seeks to provide evidence-based recommendations for organizations undergoing digital transformation or recently digitized and thus help them manage this change while avoiding negative and unwanted repercussions, especially on the human side. The findings from this study, highlighting the mediating role of technostress, may be useful for personnel policies, training programs and change management strategies that aim to balance technological innovation with employee well-being and resilience. Given how quickly technology is developing, this is particularly significant because quality results still depend heavily on human interaction (Brynjolfsson & McAfee, 2014).

Overall, this study adds to the expanding corpus of research on AI-human interaction in the workplace by providing an organizational and psychological framework for analyzing the advantages and disadvantages of digital innovation.

3.2. Research methodology

For what concerns the methodological aspect, the present research is based on a quantitative approach and adopts a cross-sectional design, with the aim of investigating the relationships between artificial intelligence (AI) adoption, techno-stress and some variables related to work-related well-being, such as the perception of job security and the quality of life at work (Work-Related Quality of Life or WRQoL). The methodological design was conceived to test two theoretically grounded mediation models, in which techno-stress acts as a mediating variable between AI adoption and perceived job security and perceived quality of life at work, respectively.

The choice of a quantitative approach is justified by the nature of the hypotheses formulated, which aim to examine causal relationships between latent constructs, measured using validated psychometric instruments. The survey was based on the administration of a structured questionnaire designed to collect data on all the variables under analysis in a comprehensive manner. The questionnaire was created by

collecting and adapting existing scales from the international scientific literature, in order to ensure validity and reliability in measuring the theoretical constructs. The specific items for each scale are not reported in this section as the full version of the administered survey is included in the Appendix.

3.2.1. Data collection

Data collection was conducted through the administration of an online questionnaire, distributed via a dedicated digital platform. The survey was open to all company employees, regardless of their sector, company function, hierarchical level, age or geographical origin. The only inclusion criterion required to participate in the survey was, in fact, current employment as an employee in an organization, a necessary condition to ensure the relevance and adherence of the responses to the context under study.

The decision not to place any further restrictions made it possible to collect data from a heterogeneous and cross-sectional sample, representative of different corporate and professional spheres, thus reflecting the complexity of the contemporary world of work in which digital technologies, and artificial intelligence in particular, are now widespread to a variable but growing extent.

Participants were given access to the questionnaire on a voluntary and anonymous basis. At the opening of the survey, there was an information section containing details on the purpose of the research, the expected duration of the compilation, confidentiality guarantees and the exclusive academic use of the collected data. Informed respondents could continue with the completion of the questionnaire.

The platform-based distribution method ensured efficient and standardized data collection, facilitating access by participants at any time and from any device while fully respecting the conditions of anonymity and privacy.

3.2.2. Measuring tools

In this research, all theoretical constructs were approached in the same way, utilizing validated psychometric scales obtained from scientific literature, which were later customized to fit the organizational context being studied. In social science,

psychometric scales are among the primary instruments used for the indirect assessment of latent constructs, such as perceptions, attitudes, emotions, well-being, or stress, which are abstract and cannot be measured directly (DeVellis, 2017).

Such scales rest upon solid theoretical frameworks and are focused on critical requirements to establish validity (the extent to which a scale measures what it intends to measure) and reliability (internal consistency among items and stability of responses over time). A well-constructed psychometric scale is one that can meaningfully provide objective and comparable measurements by transforming conceptual variables into empirical indicators through a coherent and structured set of items (Netemeyer, Bearden, & Sharma, 2003).

For this study, the selected scales met the criteria of having strong indicators of construct validity and high internal reliability, with coefficients typically evaluated using Cronbach's alpha ($\alpha > 0.70$).

The participants were asked to use the 7-point Likert-type scale, one of the most well-known and trustworthy scales in psychological and organizational research, to indicate whether they agreed or disagreed with each statement-formatted question (Joshi, Kale, Chandel, & Pal, 2015). Furthermore, a 7-point scale is useful because it offers flexibility without complexity, thus capturing sharper shifts in perceptions (Preston & Colman, 2000).

To better understand, the scale items were classified as follows: 1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neither Agree nor Disagree, 5 = Somewhat Agree, 6 = Agree, 7 = Strongly Agree.

Starting with the first variable, the adoption of artificial intelligence (AI) in organizations, was used a scale developed by Sullivan and Wamba (2024) to be assessed, which identifies three key dimensions of AI-enabled capabilities:

1- AI-Enabled Automatic Capability: This dimension focuses on AI as a powerful tool for automating operational processes and transforming businesses' efficiency by reducing the human role in AI-driven businesses. This dimension encompasses the alleviation of operational burden and enhanced efficiency, which enables personnel to devote their energies to more strategic initiatives.

2- AI-Enabled Analytics Capability: This dimension examines the use of AI to automatically analyze massive pools of data and aid in accomplishing the critical ideas in making more deeply informed strategic decisions. This is particularly significant for improving the organization's responsiveness to changes in the environment by forecasting future developments and uncovering underlying patterns.

3- AI-Enabled Relational Capability: These concepts pertain to the application of AI in interactions with customers and other stakeholders to improve relationships through personalization. The application of such technologies allows the delivery of quicker, more consistent, and more personalized services, which decisively influences customer experience and loyalty.

Sullivan and Wamba's (2024) approach illustrates how AI adoption is not a singular dimension, but rather a multifaceted one that simultaneously engages with internal operations, strategic market analysis, and market relations.
Moving on, the Digital Stressors Scale developed by Tarafdar, Tu and Ragu-Nathan (2007) was used to measure technostress, which spans five distinct sources of technological stress:

1-Techno-Overload: happens when the use of technology increases the speed and duration of the worker's tasks to be completed, thereby increasing workload. This type of stress is associated with digital acceleration as well as the proliferation of operational demands of the business.

2-Techno-Invasion: concerns an extreme sense of being perpetually reachable or a Blend of work and personal life, as well as always needing to be omnipresent. This aspect can undermine emotional well-being in balance and work-life.

3-Techno-Complexity: results from the assumption that contemporary technologies are intricate and there is a need for time and energy to be put out just to know how to use them and feel inadequate when placed alongside more seasoned colleagues. This

stressor holds relevance especially in cases where changes in technology are rapid and the support for training is lacking.

4-Techno-Insecurity: this is seen when employees are anxious for their positions due to the new technologies being introduced, or because of their lack of relevant skills. These new technologies may render tasks automated, and employees fear that only those with newer, relevant skills would be favored or hired.

5-Techno-Uncertainty: This deals with the assumption of volatility brought about by shift after shift of technology changes and their updates. The feeling of being left behind due to constant changes in systems, tools, software versions, and updates leads to technological instability that makes employees feel perpetually outdated.

In hindsight, Tarafdar et al.'s framework stems from the assumption that while technology eases processes and improves productivity, it also creates psychological costs and a drain on employee welfare and performance, which threatens their well-being, work, and overall productivity.

Moreover, concerning the measurement of job security, Kraimer et al.'s (2005) scale was used, which explores the perception of employment stability in relation to different scenarios, including economic crises, internal structural changes, and the presence of atypical contractual forms (e.g., temporary employment). The construct is particularly relevant because it acts as a mediator between objective employment conditions and subjective work attitudes, such as motivation, commitment and satisfaction (Greenhalgh & Rosenblatt, 1984).

The scale considers both perceived security in the current role and confidence in the possibility of internal redeployment in the event of restructuring. It also includes items related to the symbolic threat posed by temporary workers, who are sometimes considered competitive, and assesses how this presence influences the sense of stability and protection.

In conclusion we have the workers' well-being, that in this specific case, we first described working life quality using the WRQoL scale Van Laar et al (2007), which is a multi-dimensional tool designed for the health sector but has been adapted for a

broader spectrum of contexts. The scale captures an organization's well-being in a more global perspective, carved into six components:

1. Job and Career Satisfaction (JCS): This encompasses satisfaction regarding roles, a career and a developmental opportunity. This is related to turnover, commitment, and involvement.

2. Gladiolus General Well–Being (GWB): Deals with subjective well-being and general psychological assessment that culminate in some stress, anxiety or personal discontentment symptoms.

3. Home Work-Interface (HWI): Assesses the degree of balance between work and life with regard to flexibility, family support, and some company policies that aid reconciliation.

4. Stress at Work SAW: Relates to the level of stress and strain felt within the work setting regarding pressures, deadlines, or internal clashes.

5. Control at Work (CAW): Relates to the perceived freedom one has concerning autonomy, decision, and organizational influence over their work.

6. Working Conditions (WCS): Is about the environment of the work, including the physical, logistical, socio, and even psychological aspects, such as safety, comfort, and adequacy.

In conclusion, we can say that the WRQoL scale is recognized for its ability to capture both subjective and structural indicators of working wellbeing, providing an articulate and useful framework for organizational improvement interventions.

3.3. Data analysis

The objective of this chapter is to empirically test the three hypotheses formulated in the theoretical framework of the research. These hypotheses are based on the assumption that the adoption of artificial intelligence tools in contemporary organizational contexts produces relevant effects on workers' well-being, both in terms of quality of work life (WRQoL) and with respect to perceived job security (Job Security). Furthermore, it is hypothesized that these relationships are related to the presence of digital stress (Technostress), which represents an emerging form of psychological malaise linked to the management of technological complexity.

To test the hypotheses, a simple mediation analysis was employed, through the use of the PROCESS macro model 4 for SPSS, developed by Andrew F. Hayes (2022). This model allows us to assess the extent to which an independent variable X (AI adoption) influences a dependent variable Y (WRQoL or Job Security), and whether this relationship is partially or fully mediated by a third variable M (Technostress), which acts as a causal bridge between the two.

In both models, the statistical significance of the effects was estimated by non-parametric bootstrapping with 5,000 resamples, a technique that allows for robust estimation of indirect effects and relative 95% confidence intervals, even in the presence of non-normal data distributions (Preacher & Hayes, 2008). The data were collected on a sample of 226 employees from different organizational contexts and without sector or role-specific constraints.

The hypotheses tested were as follows:

1. H1: The adoption of AI positively influences work-related quality of life (WRQoL), as it enhances productivity and provides opportunities for skill development (Van Laar, Edwards, & Easton, 2007).

2. H2: AI adoption negatively impacts job security, as it raises concerns about the replacement of human roles by automated systems (Kraimer, Wayne, Liden, & Sparrowe, 2005); (Frey & Osborne, 2017).

3. H3: Digital stress acts as a mediating variable, exacerbating the negative effects of AI adoption on job security and WRQoL. Specifically, increased technostress due to AI tools correlates with higher levels of job insecurity and decreased employee satisfaction (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007).

3.3.1. Model 1 – AI adoption, Technostress and Work-Related Quality of Life

Starting with the first model, we wanted to explore the relationship between the adoption of artificial intelligence and perceived quality of work life, i.e., the subjective assessment of workers concerning their well-being within the organizational environment. This construct, defined by Van Laar et al. (2007), includes components such as job satisfaction, psychological well-being, work-life balance and perceived environmental conditions.

After the analysis the results first show that there is a positive and statistically significant direct relationship between AI adoption and WRQoL. The B coefficient of 0.4036, with a p-value < .001, indicates that a one-unit increase in perceived AI adoption is associated with an approximately 0.40-unit increase in perceived quality of work life. This is a moderate but robust effect, demonstrating a clear trend: when workers perceive that AI is integrated into their work environment, they tend to assess their work well-being more positively.

This effect is reinforced by an analysis of the explained variance (R^2) of 0.2152. This value means that more than 21% of the observed differences in the quality of working life among the participants can be explained by the adoption of AI and technostress. In practical terms, this is a significant result, especially in a field such as psychology and organization where many other factors (personal, social, business) contribute to explaining the perception of well-being.

However, the model also showed that AI adoption is positively associated with technostress (B = 0.2141, p < .001), with $R^2 = 0.1414$. In this case, the coefficient suggests that working in a highly digitized environment leads to a significant increase in specifically technology-related stress. Technostress is a particular form of psychological distress, characterized by anxiety, insecurity, excessive information load and difficulty in technological adaptation (Tarafdar, Tu, Ragu-Nathan, & Ragu-

Nathan, 2007). In other words, the more widespread and integrated technologies are in daily work, the greater the cognitive pressure experienced by workers can be.

This pressure has a negative effect on the quality of working life, as shown by the coefficient B = -0.2455, which is also highly significant (p = .0002). The negative sign indicates that an increase in technostress corresponds to a decrease in WRQoL. This finding confirms what has already been argued in the literature: digitization, if left unmanaged, can undermine perceived well-being, at least partially nullifying the technical benefits of innovation.

Confirming this, the indirect effect of AI adoption on WRQoL, mediated by technostress, is -0.0526, with a confidence interval between -0.0946 and -0.0188. Since the interval does not include zero, the effect is statistically significant. This means that part of the positive effect of AI on the quality of working life is neutralized, if not reversed, by the presence of digital stress.

In summary, this first model confirms Hypothesis 1, but also shows that the benefit is partial, as it is compromised by the stress generated by the technologies themselves, thus also validating Hypothesis 3, with regard to WRQoL..

3.3.2. Model 2 – AI adoption, Technostress and Job Security

The second model analyzed the relationship between AI adoption and job security, i.e. the worker's subjective perception of the stability of his or her employment over time, contractual continuity, and confidence in the permanence of his or her role. According to Hypothesis H2, AI adoption was expected to have negative effects on job security due to the fear of replacement by automated systems. Contrary to the hypothesis, the data show a significant positive direct effect, given by a coefficient B = 0.1929, and a $p < .001$. Workers who perceive a high use of AI in their organization report greater security in their workplace. This can be interpreted by taking into account the fact that the adoption of AI, in many situations, does not replace the human role but rather accompanies it, assists it, or makes it more strategic, favoring the idea of being an active part of a modern and technologically advanced organization. As in the first model, the AI adoption is associated with an increase in technostress, given by B = 0.2141, while job security results having a strong negative effect caused by

technostress (B = -0.3938, p < .001). This finding is particularly relevant, as it suggests that technostress not only reduces satisfaction and well-being, but also undermines workers' confidence in the stability of their employment, as it makes them feel inadequate, vulnerable or outgunned by the technologies themselves. The indirect effect of AI adoption on job security, mediated by technostress, is B = -0.0843, with a confidence interval [-0.1407 ; -0.0393], which is also significant. In practical terms, this means that part of the positive potential of AI on perceived security is cancelled out by the psychological pressure generated by the technology itself. In conclusion, if Hypothesis 2 is not confirmed in its direct form (AI has no negative impact), it finds an implicit form of validity through the mediation of technostress, fully confirming Hypothesis 3 for job security as well.

3.4. Findings and results

In summary, then, the first set of findings concerns the link between AI adoption and quality of working life. The data show a statistically significant and positive correlation: workers who perceive a greater presence of AI-based tools in their working environment tend to report higher levels of subjective well-being. This result is consistent with what has been observed in recent literature (Van Laar, Edwards, & Easton, 2007), where the role of intelligent technologies in making work more efficient, autonomous and less physically and mentally demanding is emphasized.

The data indicates that people view the advent of AI as a chance to enhance the entire work experience rather than as a burden or a challenge. Work can be positively restructured to become more meaningful, less dispersive, and more focused on the abilities of the individual through the automation of repetitive tasks, faster and more efficient data analysis, and intelligent systems' decision assistance.

A particularly interesting result concerns perceived job security. Contrary to some catastrophic predictions about the impact of automation (Frey & Osborne, 2017), AI adoption was found to be positively correlated with perceived job security. Workers who feel exposed to the use of AI feel, at the same time, more stable, more useful to the organization, and less vulnerable to replacement.

This effect can be interpreted in the light of a conception of AI as a strategic ally rather than a threat. In many situations, technology improves human labour rather than replaces it by boosting accuracy, expediting execution times, and encouraging more effective process management. Furthermore, exposure to AI can be interpreted as an indication of modernity and competitiveness, which strengthens the employee's sense of being in a cutting-edge setting that can support growth and continuity.

However, enthusiasm for the benefits of AI cannot obscure the emergence of a critical component transversal to both models: technostress. This construct represents a form of psychological distress specifically related to the use of digital technologies. It manifests itself through several symptoms, including the feeling of information overload, fatigue in keeping up with constant updates, loss of control over the pace of work and difficulty in mentally disconnecting from one's role.

The results confirm that the adoption of AI significantly increases technostress. This is an extremely relevant finding, as it introduces an element of ambivalence: the more technology spreads, the more the perception of being exposed to constant cognitive pressure increases, even if the work experience appears more efficient and satisfying.

Technostress, in turn, has a negative impact on both the quality of working life and job security. Specifically, it has been shown that the direct positive effect of AI on these outcomes is partially compromised by the presence of digital stress, which acts as a psychological brake. When workers experience difficulties in adapting, feel burdened by unintuitive tools or fear that they are not sufficiently up-to-date, they tend to reduce their positive evaluation of the work experience and, in parallel, to perceive their position as more unstable and less guaranteed.

In both models, a significant negative indirect effect was calculated, confirming the role of technostress as an active and penalizing mediator. Although the adoption of AI is generally associated with positive outcomes, these are eroded to the extent that the employee experiences a high level of technostress.

3.5. Conclusions

The set of results obtained makes it possible to construct a complex but coherent reading of the impact of artificial intelligence in the workplace. In fact, the empirical

analysis conducted shows that the adoption of artificial intelligence produces relevant, but not unequivocally positive, effects on occupational well-being. The technology is presented as a potentially enabling tool, capable of improving satisfaction, efficiency, and the perception of stability, but the psychological costs associated with its use are real and not negligible.

On the one hand, AI presents itself as an important lever for the improvement of human work, contributing to a sense of efficiency, control, and enhancement of skills. On the other hand, however, it introduces new challenges, which have to do with individual and organizational capacity to cope with digital change in a sustainable way.

One of the most evident elements is the critical role of technostress as a modulating and critical variable: it represents a sort of 'psychological filter' capable of substantially altering the effects of technological innovation and through which each technological innovation is interpreted, experienced and internalized. It is not a simple side effect, but a structural condition of the contemporary work experience, made even more intense by the continuous acceleration of technological processes.

The fact that technostress reduces the quality of working life and increases the perception of insecurity highlights the importance of company policies that are attentive to digital well-being. In the absence of training support, an inclusive organizational culture and ergonomic tools, even the most promising innovation risks turning into a source of anxiety, frustration and emotional disconnection. This aspect calls for a specific responsibility on the part of organizations: it is not enough to introduce AI, its impact must also be humanized.

From a theoretical point of view, the results suggest that artificial intelligence does not produce universal effects, but relational and contextual ones. Technology, in itself, does not directly determine psychological outcomes: it is the interaction between individual, technology and organizational environment that generates the observed results. Working wellbeing in the digital age depends not only on the functionality of the tools, but on the ability of the socio-technical system to adapt to and sustain change.

In conclusion, the data confirm that AI can be a valuable ally in the construction of more satisfying, sustainable and safe working environments, but only on condition that it is integrated in a conscious and responsible manner, with attention not only to performance indicators, but also to the psychological and relational variables that

profoundly influence the workers' experience. The challenge is not only digital, but profoundly human: it is a matter of governing the technological transformation so that it does not overwhelm, but reinforces, the centrality of the person at work.

CHAPTER 4
DISCUSSION

4.1. Interpretation of the main findings

The data analysis conducted in this study revealed significant results that help to clarify how the adoption of artificial intelligence (AI) affects workers' perceptions of job security and quality of work life (WRQoL). The mediation models tested indicate that, while AI is perceived in a generally positive way, this effect may be partially compromised by the presence of technostress, confirming the relevance of the latter variable as a psychological and cognitive filter in the digital transition.

4.1.1. AI and job security: a positive, but mediated effect

The first model, concerning the relationship between AI adoption and job security, revealed a positive direct effect: AI adoption is associated with an increase in employees' perception of job security. This result is particularly interesting as it departs from some hypotheses in the literature, according to which AI would represent a threat to human employment, as it could potentially replace traditional roles (Frey & Osborne, 2017). However, this prediction appears more nuanced today, in light of studies that highlight how AI, if implemented correctly, is experienced by workers as a support and empowerment tool, rather than a replacement (Jarrahi, 2018); (Braganza, Chen, Canhoto, & Sap, 2021).

Braganza et al. (2021), for example, speak of ‘psychological productive contracts’ to describe those situations where the adoption of AI is accompanied by transparent communication strategies, investment in training and active employee engagement. In such contexts, AI is experienced not as a precarious factor, but as an element that

reinforces one's role, usefulness and centrality within the organization. In fact, the sense of control and competence deriving from the mastery of advanced technologies contributes to increasing the perception of employment stability, in line with what Kraimer et al. (2005) observed, whereby job security is closely linked to perceived self-efficacy.

However, this beneficial effect is partially mediated by technostress, which acts as a psychological vulnerability factor. Artificial intelligence, if not properly integrated and supported, can introduce new cognitive burdens, feelings of inadequacy or anxiety related to skills obsolescence (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007); (Gaudioso, Turel, & Galimberti, 2017) .Workers who perceive themselves as technologically unprepared, or who are not given the time and resources to adapt to new systems, may develop implicit fears of replacement or marginalization, resulting in an erosion of psychological security.

The evidence from this study is an important signal for organizations going through digital transformation processes. In contrast to the often-dominant narrative that AI threatens human employment (Frey & Osborne, 2017), the findings indicate that, if appropriately managed, the introduction of AI can be interpreted by workers as an element of stabilization and enhancement, rather than prevarication. This evidence opens up a number of operational implications, which call into question not only the technologies implemented, but above all the relational and organizational ways in which they are introduced.

A first fundamental implication concerns internal strategic communication. As suggested by Braganza et al. (2021), organizations need to invest in transparent, authentic and two-way forms of communication that unequivocally clarify the role of AI in the business ecosystem. It is important that employees understand why the innovation is happening, what tasks it will change and, most importantly, what the future role of the human will be in the work process. An environment in which technology is presented as a supporting tool, and not as a substitute, strengthens trust and the perception of stability (Braganza, Chen, Canhoto, & Sap, 2021). One of the most effective interventions to reinforce the perceived security of workers in digitized environments is the implementation of structured pathways of continuous training, with a focus on digital skills and technological adaptation. The adoption of AI may

generate insecurity not so much because of the technology itself, but because of the subjective perception of not being up to the new operational demands (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). In this scenario, training needs to focus on building technological self-efficacy—the belief that one can utilize digital tools effectively—rather than just imparting technical information (Compeau & Higgins, 1995). Recent studies have shown that workers who receive the right training not only adapt to technological change more quickly, but they also show less techno-insecurity and greater confidence in the stability of their jobs (Van Laar, Van Deursen, Van Dijk, & De Haan, 2017). As a result, companies must provide ongoing, conveniently accessible, and adaptable programs that meet the needs of both the company and each individual employee. A further area of focus concerns the active involvement of employees in AI introduction processes. Organizations should create spaces and tools to collect employee feedback, involve them in pilot phases, internal committees or decision-making workshops, and foster participatory governance of the technology. As Rousseau (1995) points out, a psychological contract perceived as fair and inclusive is essential for building psychological security. Involvement promotes agency, and agency is a prerequisite for counteracting the dynamics of symbolic exclusion that often accompany top-down technological change (Bankins & Formosa, 2023). In parallel, it is equally important to provide psychological support and peer mentoring interventions to support workers' subjective adaptation to digital transformation. Indeed, the introduction of AI can generate stress, feelings of isolation and perceptions of inadequacy, especially among those employees who are less familiar with technology or who do not feel an active part of the change. Support programmes, such as internal counselling desks, group meetings, or the creation of figures such as digital coaches or change ambassadors, can ease the transition by strengthening the sense of belonging and reducing the fear of judgement (Gaudioso, Turel, & Galimberti, 2017)
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Furthermore, inner mentorship exposes employees to spillover and peer learning which is especially beneficial in the process of reducing the psychological and technical AI barriers. More specifically, for employees who come to believe that through these human resources they have access to someone who is friendly,

understanding and skilled, this kind of attitude will be the one that motivates them to change their mindset and feel more secure at work.

Finally, a key element in consolidating the positive effect of AI on job security is the adoption of a systematic approach to continuously monitor the perception of job security and sources of techno-stress. Too many organizations realize the psychological impact of technological change too late, when symptoms of malaise, conflict or disengagement have already emerged. For this reason, it is crucial to use regular assessment tools - such as internal climate surveys, focus groups, or anonymous listening platforms - to collect data on sensitive variables, such as the degree of role clarity, mastery of digital tools, and the level of trust in leadership (Tarafdar, Cooper, & Stich, 2019). Such information makes it possible to intervene in a timely and targeted manner, before insecurity crystallizes. Moreover, the mere activation of an organizational listening system contributes to an increase in the perception of fairness and recognition, two elements closely linked to psychological security and confidence in the future of work (Rousseau, 1995). Continuous monitoring, therefore, is not only a diagnostic function, but also a powerful signal of care and attention on the part of the organization.

Ultimately, the positive effect of AI adoption on perceived job security can only be consolidated if organizations adopt a logic of human accompaniment to technological transformation. AI, in itself, does not generate security or insecurity: it is the organizational environment - made up of communication, training, participation and culture - that transforms it into either an ally of stability or a source of latent anxiety. The results of this research clearly indicate that the quality of relationships and management practices is what ultimately determines whether AI strengthens or undermines employees' confidence in their professional future.

4.1.2. AI and Work-Related Quality of Life (WRQoL): between enhancement and cognitive fatigue

In the second model, which analyses the relationship between AI adoption and WRQoL, a positive and statistically significant direct effect is confirmed. Higher well-

being is correlated with the perception of a digital and technologically advanced workplace, according to research by Van Laar et al. (2007), who discovered that elements like role satisfaction, work-life balance, autonomy in decision-making, and development opportunities impact the quality of working life. AI can be used to accomplish this, making work less repetitive, more creative, flexible, and capable of solving problems (Brynjolfsson & McAfee, 2014). Research indicates that AI can make employees feel more capable, independent, and appreciated by enhancing operational decision-making and enabling information access (Davenport & Ronanki, 2018). Furthermore, the ability to work with advanced technological tools can be read as an indicator of trust on the part of the organization. However, even in this case, the positive effect of AI on the quality of work life is downplayed by the presence of technostress. The dimensions of techno-overload, techno-invasion and techno-complexity described by Tarafdar et al. (2007) are central in reducing job satisfaction and generating emotional fatigue, tension and work-life imbalance. Recent studies, such as that of Bankins and Formosa (2023), have highlighted how the introduction of artificial intelligence in work contexts does not only represent a technical or operational challenge, but can profoundly affect the more identity dimensions of work, undermining the sense of meaningfulness, the perception of agency and the sense of organizational belonging. In particular, these authors stress that when intelligent systems are designed or implemented without explicit attention to decision-making transparency, the possibility of personalization and respect for the autonomy of the individual, the result can be a progressive dehumanization of the work experience. The loss of agency, understood as the ability to actively influence one's environment and to feel oneself the author of one's own contribution (Bandura, 2001), emerges as one of the most critical effects. When AI automates crucial decisions without providing room for human judgment, or introduces rigid operational constraints without the possibility of local adaptation, workers may perceive a drastic reduction in their influence and competence. This not only undermines intrinsic motivation (Deci & Ryan, 2000), but can also trigger processes of job alienation, as suggested by Hackman and Oldham's (1976), Job Characteristics Theory, which identifies autonomy as one of the fundamental pillars of meaningful work.

In parallel, algorithmic opacity - that is, the inability to understand how and why a certain decision output was generated by an AI system - introduces a new form of psychological uncertainty. As pointed out by O'Neil (2016), in his work on ‘Weapons of Math Destruction’, non-transparent algorithms tend to erode trust not only in systems, but also in the organizations that adopt them. Algorithmic opacity makes it difficult for workers to feel part of decision-making processes, relegating them to the role of passive executors. This phenomenon was also recently confirmed by Kellogg, Valentine and Christin (2020), who showed how the adoption of AI in healthcare and financial contexts has increased the perception of exclusion and marginalization among professionals.

The deeper risk, then, is that the uncritical adoption of smart technologies leads to a reduction in the sense of meaningfulness of work, a central concept in professional identity theory (Pratt, Rockmann, & Kaufmann, 2006) and in the theory of meaningful work by Rosso, Dekas and Wrzesniewski (2010). Where workers can no longer see the value or human impact of their own contribution, motivational impoverishment occurs, which can result in disengagement, burnout and turnover.

In this context, techno-stress is no longer just a technical phenomenon related to the inability to handle new technologies, but is a major ethical-organizational problem. Indeed, Tarafdar et al. (2019), highlighted that techno-stress related to the perceived loss of control or understanding generates not only individual malaise but negative impacts on the entire organizational climate.

These elements clearly indicate that the transformative value of AI does not lie in its intrinsic capability, but in the relational and value-based quality with which it is designed, communicated and integrated. Intelligent systems that offer explainability (Guidotti, Monreale, Ruggieri, & al., 2018), personalization of processes and that leave room for users' decision-making autonomy can act as empowerment tools, reinforcing agency and a sense of belonging. Conversely, systems perceived as inscrutable, impersonal or intrusive can become powerful sources of alienation and psychological vulnerability.

Ultimately, tackling AI techno-stress requires radically rethinking the way organizations conceive the relationship between technology and human labor: it is not enough to make technologies efficient, the ethics of their design and use must be

ensured so as to preserve and indeed enhance the conditions for autonomous, dignified and inherently meaningful work.

To amplify the positive effects, organizations must adopt proactive strategies that foster the integration of AI as an ally of well-being and not as an impersonal control or standardization factor. A first concrete implementation is the use of AI in tools supporting work flexibility, such as technologies for autonomous time management, intelligent task scheduling or support for personalized activity planning. In smart working or hybrid working contexts, tools such as these have been shown to foster a better harmonization of personal and professional life, with positive effects on subjective well-being (Spagnoli, et al., 2020) ; (Waizenegger, McKenna, Cai, & Bendz, 2020).

AI can also be used in HR platforms to promote well-being by means of predictive workload and stress systems, which have already been adopted by several companies. These solutions, which suggest breaks or reorganization of priorities based on behavioral patterns, represent a concrete example of how technology can become a tool for care and prevention (Bankins & Formosa, 2023). In parallel, AI-based knowledge management systems can facilitate continuous learning and sharing of best practices, increasing the sense of competence and work engagement (Soulami, Benchekroun, & Galiulina, 2024).

To make these benefits sustainable over time, it is essential to adopt a user-centered approach in the design of smart technologies. In fact, one of the key levers is the development of simple, consistent and intuitive interfaces, capable of reducing cognitive load and adapting to the technological familiarity levels of different users (Ayyagari, Grover, & Purvis, 2011). When technologies are perceived as opaque, intrusive or constantly changing, they can generate techno-complexity and reduce job satisfaction. Approaches such as co-design, in which users are actively involved in the development process, help to improve the usability and acceptance of technology (Venkatesh & Davis, 2000).

A second critical area concerns digital availability and time management in response to the growing risk of techno-invasion. The continuous use of AI systems that notify, automate or monitor tasks can compromise the boundaries between work and private life. In this sense, organizations should introduce formal digital disconnection policies,

such as suspending out-of-hours notifications or planning digital quiet time slots, which have already been successfully adopted by companies such as Volkswagen (Mazmanian, Orlikowski, & Yates, 2013). Such measures protect work-life balance and reduce the psychological pressure associated with hyper-connectedness. A further impactful intervention is the development of advanced digital literacy, not only technical but also critical and ethical. It is crucial that workers not only learn how the tools work, but also develop the ability to assess the decision-making, ethical and organizational implications of using AI. The combination of cognitive, metacognitive and social skills, as suggested by Van Laar, van Deursen, van Dijk and de Haan (2017), is indispensable to consciously manage the relationship with complex technologies, avoiding forms of alienation or dependency. Furthermore, it becomes increasingly relevant to promote an ethical implementation of AI based on the principles of transparency, explainability and respect for the dignity of human labor. Companies should adopt guidelines inspired by international ethical frameworks (such as the recommendations of the European Commission's High-Level Expert Group on AI), which recommend designing intelligent systems that make the algorithms' decision criteria understandable, ensure non-discrimination in automated processes, and keep the human being at the center of the decision-making process (Bankins & Formosa, 2023). In addition to preventing any misuse or other types of covert monitoring, such an implementation boosts employee trust and promotes a more equitable, accountable, and welfare-focused workplace culture. To guarantee that digital innovation serves as a tool for human progress and labor sustainability rather than compromising fundamental rights, this type of ethical approach to AI is crucial. In conclusion, implementing AI can be a strategic tool to raise working life quality, but it calls for a thoughtful, sustainable, and human-centered strategy. Only by integrating technology with design, organizational and training practices that are attentive to well-being will it be possible to translate the potential of AI into a concrete benefit for workers and organizations.

4.2. An interpretative summary

In conclusion, the results obtained confirm that the adoption of artificial intelligence can improve both the perception of safety and the quality of work, but only on condition that it is accompanied by a conscious management of the psychological and organizational impacts. Techno-stress emerges as a crucial modulator, capable of compromising or neutralizing the potential benefits of technological innovation.

These findings are part of a growing strand of studies calling for a holistic approach to digital transformation, integrating performance and well-being, efficiency and meaningfulness. As Braganza et al. (2021) note, achieving sustainable digitization requires building organizational relationships based on trust, transparency and participation. And as Bankins and Formosa (2023) add, an 'ethical' artificial intelligence is not only one that respects the rules, but one that does not dehumanize the work experience. In this sense, the results of this research not only confirm existing models, but also raise the need for person-centered AI governance.

4.3. Limitations and future research directions

Despite using an accurate approach based on verified instruments, the current study has some limitations that should be noted and that provide important information for the advancement of future research. First off, the study was carried out using a cross-sectional approach, which enables us to capture a moment in time but does not provide conclusive evidence of causal correlations between the variables under investigation (Bryman, 2016). The dynamics linked to the introduction of artificial intelligence in work contexts, as well as the evolution of technostress, job security and the quality of working life, require longitudinal analyses, capable of monitoring changes over time and capturing any processes of adaptation, resistance or restructuring of professional identity (Tarafdar, Cooper, & Stich, 2019). Indeed, the adoption of AI is not a one-off event, but a gradual process that may produce different effects in the short, medium and long term.

A second limitation concerns the relatively narrow focus of the theoretical model used. The study examined four main variables: adoption of artificial intelligence,

technostress, perceived job security and work-related quality of life. However, potentially relevant contextual factors were not included, such as leadership style, quality of internal communication, organizational, digitization policies, or cultural norms prevailing in the work context. These elements may act as moderators or mediators, profoundly influencing how the introduction of AI is experienced by workers (Ayyagari, Grover, & Purvis, 2011). A more complete understanding of the phenomenon would therefore require the integration of organizational, structural and symbolic variables.

The operationalization of technostress has also played a role in the results. Although the variable has been a mediator of the link between AI adoption and labour outcomes, it has been used globally, without analyzing the different sub-dimensions such as: techno-overload, techno-invasion, techno-complex, techno-insecurity and techno-uncertainty (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). These are known to have different effects on people's psychological well-being and their productivity at work too. Therefore, not studying these aspects separately might have given a simplistic view of the role of technostress in the processes analyzed.

Another relevant limitation of the research, is related to the fact that no distinction among different sectors has been performed. The study did not distinguish among different industries where the level of adoption of artificial intelligence and the nature of work tasks can differ largely: for example, manufacturing, services, healthcare, education, finance, etc. (Bruun & Duka, 2018) (Frey & Osborne, 2017). This has probably made it difficult to uncover specific dynamics which could lead to the identification of more tailored challenges employees are facing in different sectors. This distinction is indeed quite critical to gauge the variables capable of shaping the outcomes of AI and to design ad hoc support and training policies.

Given these considerations, a number of research trajectories beckon.

Firstly, as emphasized earlier, there is a crying need for longitudinal studies, which could map the evolution of thoughts, feelings and outcomes about Al adoption over time. Secondly, it is essential to broaden the model to include organizational and cultural variables that can account for the distinct ways by which Al is perceived across subjects or situations (Bankins & Formosa, 2023). The impact of perceived support,

trust in management, involvement in decision-making and the presence of an innovation oriented culture merits greater attention.

Furthermore, future investigations could focus on a differentiated analysis of the components of technostress, so as to better understand which aspects constitute the main sources of discomfort, and which can be addressed or mitigated with targeted support, training and technology design strategies (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). Similarly, a comparative sectoral perspective would allow the identification of high-risk areas of technostress and replicable areas of good practice (Bruun & Duka, 2018).

Another promising direction concerns the involvement of other organizational actors besides employees, such as managers, AI system designers, HR specialists and trade unions. Indeed, understanding the AI implementation process and its ethical and operational implications requires a multi-level and systemic approach. Only through the triangulation of perspectives will it be possible to build a realistic picture of the ongoing transformations.

Finally, the issue of the ethical and transparent design of artificial intelligence deserves special attention. Trust in intelligent systems, comprehensibility of algorithms, preservation of decision-making autonomy and respect for the dignity of human labor represent crucial challenges for the future (Bankins & Formosa, 2023). In this sense, research can contribute not only to describing current phenomena, but also to guiding regulatory, design and organizational choices, promoting an inclusive, sustainable and welfare-oriented digital transition.

4.4.Further implications for the Management

In addition to the organizational aspects already addressed, an important implication that has emerged concerns the need for managers to rethink the very concept of leadership in the age of artificial intelligence. Digital evolution requires not only new technical skills, but transformational leadership capable of handling the ambivalence of AI: a technology that, on the one hand empowers, on the other hand can generate alienation. Leaders should develop metacognitive skills, able to pick up on the weak

signals of organizational malaise related to technostress and loss of agency, and translate them into timely and inclusive actions (Ayyagari, Grover, & Purvis, 2011).

Another central aspect is the assessment of the impact of AI in performance management practices. Traditionally oriented towards the measurement of visible and quantitative results, these systems will have to evolve to also take into account less tangible dimensions, such as cognitive load, quality of work experience and the perception of algorithmic justice. Artificial intelligence tools must be complemented by human control mechanisms, ensuring transparency in decision-making criteria and recourse possibilities, to avoid demotivating effects or perceptions of dehumanization (Bankins & Formosa, 2023).

Furthermore, the adoption of AI implies new ethical responsibilities for management, which do not end with regulatory compliance. Managers are called upon to foster a corporate culture in which technology is a tool to serve the dignity of work, and not an end in itself. This implies, for example, ensuring that automation systems do not unwittingly penalize specific categories of workers (e.g. by age, gender or level of digital literacy), but that they foster paths of inclusion and equitable growth (Venkatesh & Davis, 2000).

Finally, the introduction of AI can be a strategic lever to redefine engagement and retention metrics, orienting them towards more qualitative dimensions. Monitoring the sense of belonging, the meaning attributed to work and trust in innovation processes becomes crucial to prevent phenomena of emotional disconnection or talent drain in highly digitized contexts (Spagnoli, et al., 2020).

In short, the management of the future will have to combine technological vision and human sensitivity, integrating AI into an organizational culture centered on transparency, listening and active inclusion. Only in this way will it be possible to fully exploit the potential of artificial intelligence without sacrificing the psychological sustainability of work.

CHAPTER 5
CONCLUSION

5.1.Conclusion

The introduction of artificial intelligence in work contexts constitutes a structural transformation that not only affects production processes, but also profoundly affects the very meaning of work, the role of the human being in organizations and the psychological dynamics that accompany innovation. This research aimed to analyses the impact of the adoption of AI on perceived job security and quality of work life (WRQoL), with a focus on the role of technostress as a mediating variable. The aim was to offer an articulate interpretation, which would overcome reductive or deterministic readings, and render the complexity of organizational experiences within the digital transition.

The results that emerged show that the perception of the introduction of AI-based tools can be associated with a strengthening of job security and an improvement in the quality of professional experience. This finding stands in stark contrast to some pessimistic predictions that have described AI as a generalized threat to human employment (Frey & Osborne, 2017). Instead, when managed consciously, AI is often interpreted as an enabling resource, capable of enhancing human skills, reducing operational repetitiveness and giving greater strategic centrality to the role of the worker (Jarrahi, 2018); (Braganza, Chen, Canhoto, & Sap, 2021). The adoption of technology can thus become an opportunity for development, enhancing a sense of mastery, motivation and participation.

However, this positive trajectory is not automatically realized. In fact, the results confirm that the introduction of AI is associated with a significant increase in technostress, which acts as a psychological vulnerability factor capable of eroding perceived job security and well-being. The negative mediation exerted by technostress

highlights that the impact of technology depends not only on its functions, but also on how it is experienced by subjects, introduced by organizations, and supported in its subjective effects (Tarafdar, Cooper, & Stich, 2019). The risk is thus not only functional, but symbolic and emotional: AI can generate a sense of exclusion, anxiety, disorientation or loss of control if not accompanied by appropriate processes of training, communication and involvement.

These findings reinforce a socio-technical approach to digital transformation, according to which the effectiveness of innovations is not intrinsic to the technology, but depends on the relationship established between tools, people and organizational structures (Orlikowski, 1992). AI's worth is thus demonstrated not just by its operational capabilities but also by its capability to be embraced, comprehended, and incorporated into a workplace culture that prioritizes people. To achieve this, a design and managerial approach that can sustain innovation and trust, efficiency and meaningfulness, and performance and well-being is needed.

In terms of application, the thesis highlights the need to develop strategies for managing technological change that are human, inclusive and sustainable. Organizations wishing to benefit from digital transformation need to invest in structured accompanying activities: continuous training programs, internal listening tools, psychological support, participative leadership practices and well-being-oriented policies. In fact, the positive effect of AI on job security is conditioned by the organizational climate and employees' perception of fairness and agency (Bankins & Formosa, 2023). It is only in an environment that actively supports learning and participation that innovation can be experienced as a resource and not as a threat.

Moreover, the findings raise broader questions about the meaning of work in the algorithmic age. AI is not only a productive tool, but also a symbol of the way organizations redefine the relationship between humans and machines, between decision and delegation, between control and autonomy. The opacity of algorithmic systems, the difficulty of understanding automated decision-making logics and the marginalization of human judgement can undermine perceptions of justice, recognition and meaning in work (Rosso, Dekas, & Wrzesniewski, 2010); (Floridi, et al., 2018). In this sense, the challenge of AI is not only technological, but deeply

ethical: it requires governance based on principles of transparency, explainability, accountability and respect for professional dignity (European Commission, 2020).

Finally, the thesis emphasizes the importance of an ecological and integrated vision of digital transformation, involving all organizational and institutional actors. To understand and govern technological change, it is not enough to listen only to workers: it is necessary to include the voices of managers, planners, HR teams, trade unions and policy makers, promoting a systemic perspective. Only through cooperation between knowledge and roles will it be possible to design a future of work that is technologically advanced but also socially just.

In summary, this research shows that the impact of artificial intelligence on work is not predetermined: it is an open process, which depends on the organizational, cultural and ethical choices that accompany its implementation. The future of work with AI will not be decided by machines, but by how companies choose to integrate the technologies into their vision of human work. In this choice lie the real possibilities of building an innovation that not only transforms, but elevates the quality of work experience, restoring centrality to the person even in the age of artificial intelligence.

REFERENCES

Brynjolfsson, E., & McAfee, A. (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies. W. W. Norton & Company.*

Lee, J., Davari, M., Singh, J., & & Pandhare, V. (2018). *How AI transforms human labor. Journal of AI Research, 5(3), 76–92.*

Sverke, M., Hellgren, J., & Näswall, K. (2002). *No security: A meta-analysis and review of job insecurity and its consequences. Journal of Occupational Health Psychology, 7(3), 242–264.*

Turner, J. C., & Tajfel, H. (1979). *An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), The social psychology of intergroup relations (pp. 33–47). Brooks/Cole.*

AI, E. C.-L. (2019). *Ethics guidelines for trustworthy AI. European Commission. Retrieved from https://ec.europa.eu.*

Ajunwa, I., Crawford, K., & Schultz, J. (2017). *Limitless worker surveillance. California Law Review, 105(3), 735–776.*

Allen, T. D., Golden, T. D., & Shockley, K. M. (2021). *How effective is telecommuting? Assessing the status of our scientific findings. Psychological Science in the Public Interest, 22(2), 89–118.*

Ashford, S. J., Lee, C., & Bobko, P. (1989). *Ashford, S. J., Lee, C., & Bobko, P. (1989). Content, cause, and consequences of job insecurity: A theory-based measure and substantive test. Academy of Management journal, 32(4), 803-829.*

Autor, D. H. (2015). *Why are there still so many jobs? The history and future of workplace automation. Journal of economic perspectives, 29(3), 3-30.*

Autor, D. H., Levy, F., & Murnane, R. J. (2003). *Autor, D. H., Levy, F., & Murnane, R. The skill content of recent technological change: An empirical exploration. The Quarterly journal of economics, 118(4), 1279-1333.*

Ayyagari, R., Grover, V., & Purvis, R. (2011). *Technostress: Technological antecedents and implications. MIS Quarterly, 35(4), 831-858.*

Bakker, A. B., & Demerouti, E. (2007). *The job demands-resources model: State of the art. Journal of Managerial Psychology, 22(3), 309–328.*

Bandura, A. (2001). *Social cognitive theory: An agentic perspective. Annual review of psychology, 52(1), 1-26.*

Bankins, S., & Formosa, P. (2023). *The ethical implications of artificial intelligence (AI) for meaningful work. Journal of Business Ethics, 185, 725–740.*

Bessen, J. (2018). *AI and jobs: The role of demand (No. w24235). National Bureau of Economic Research. .*

Braganza, A., Chen, W., Canhoto, A., & Sap, S. (2021). *Productive employment and decent work: The impact of AI adoption on psychological contracts, job engagement and employee trust. Journal of business research, 131, 485-494.*

Brod, C. (1984). *Technostress: The human cost of the computer revolution. Addison-Wesley.*

Brougham, D., & Haar, J. (2018). *Smart technology, artificial intelligence, robotics, and algorithms (STARA): Employees' perceptions of our future workplace. Journal of Management & Organization, 24(2), 239–257. .*

Bruun, E., & Duka, S. (2018). *The future of employment and the impact of artificial intelligence: Scenarios and strategies. Journal of Technological Forecasting, 45(3), 203-219.*

Bryman, A. (2016). *Social research methods. Oxford university press.*

Brynjolfsson, E. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies (Vol. 236). WW Norton Company.*

Brynjolfsson, E., & McAfee, A. (2011). *Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy. Brynjolfsson and McAfee.*

Business Insider. (2025). *Sam Altman and Geoffrey Hinton advocate for universal basic income in response to AI-driven job displacement. Retrieved from https://www.businessinsider.com.*

Compeau, D. R., & Higgins, C. A. (1995). *Computer self-efficacy: Development of a measure and initial test. MIS quarterly, 189-211.*

Craig, R. T., & al., e. (2019). *The role of perceived AI identity threat in employee resistance. International Journal of Technology Management, 82(3), 241–260.*

Davenport, T. H., & Ronanki, R. (2018). *Artificial Intelligence for the real world. Harvard Business Review, 96(1), 108–116.*

Davis-Blake, A., Broschak, J. P., & George, E. (2003). *Happy together? How using nonstandard workers affects exit, voice, and loyalty among standard employees. Academy of Management Journal, 46(4), 475-485.*

Deci, E. L., & Ryan, R. M. (2000). *The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. Psychological inquiry, 11(4), 227-268.*

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). *The job demands-resources model of burnout. Journal of Applied Psychology, 86(3), 499–512.*

Derks, D., Bakker, A. B., Peters, P., & van Wingerden, P. (2015). *Work-related smartphone use, work-family conflict and burnout: The moderating role of segmentation preference. Journal of Occupational Health Psychology, 20(1), 77–89.*

DeVellis, R. F. (2017). *Scale Development: Theory and Applications (4th ed.). Sage Publications.*

Dwivedi, Y. K., & al., e. (2021). *Artificial Intelligence (AI): Multidisciplinary perspectives. International Journal of Information Management, 57, 101994.*

Easton, S., & Van Laar, D. (2013). *Work-Related Quality of Life (WRQoL) Scale: A Measure of Quality of Working Life. University of Portsmouth.*

European Commission. (2020). *Ethics guidelines for trustworthy AI. High-Level Expert Group on Artificial Intelligence. https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai.*

Fallows, J. (2011). *Better Than Human: Why Robots Will – And Must – Take Our Jobs. Wired Magazine, 24 dicembre 2012. https://www.wired.com/2012/12/ff-robots-will-take-our-jobs.*

Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., & Vayena, E. (2018). *AI4People—an ethical framework for a good AI society: opportunities, risks, principles, and recommendations. Minds and machines, 28, 689-707.*

Frey, C. B., & Osborne, M. A. (2017). *The future of employment: How susceptible are jobs to computerisation? Technological Forecasting and Social Change, 114, 254–280. .*

Gaudioso, F., Turel, O., & Galimberti, C. (2017). *The mediating roles of technostress creators. Computers in Human Behavior, 69, 189–196.*

Greenhalgh, L., & Rosenblatt, Z. (1984). *Job insecurity: Toward conceptual clarity. Academy of Management review, 9(3), 438-448.*

Greenhaus, J. H., & Beutell, N. J. (1985). *Sources of conflict between work and family roles. Academy of Management Review, 10(1), 76–88.*

Guidotti, R., Monreale, A., Ruggieri, S., & al., e. (2018). *A Survey of Methods for Explaining Black Box Models.*

Gull, A., Ashfaq, J., & Aslam, M. (2023). *AI in the Workplace: Uncovering Its Impact on Employee Well-being and the Role of Cognitive Job Insecurity. International Journal of Business and Economic Affairs, 8(4), 79–91. .*

Hackman, J. R., & Oldham, G. R. (1976). *Motivation through the design of work: Test of a theory.*

Huisman, M., & Van Dijk, J. (2020). *The digital divide. Cambridge/Medford: Polity. .*

Ibarra, D., Ganzarain, J., & Igartua, J. I. (2018). *Business model innovation through industry 4.0: A review. Procedia Manufacturing, 22, 4–10.*

Jarrahi, M. H. (2018). *Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making. Business horizons, 61(4), 577-586.*

Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). *Likert Scale: Explored and Explained. British Journal of Applied Science & Technology, 7(4), 396–403.*

Karasek Jr, R. A. (1979). *Job demands, job decision latitude, and mental strain: Implications for job redesign. Administrative science quarterly, 285-308.*

Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). *Algorithms at work: The new contested terrain of control. Academy of management annals, 14(1), 366-410.*

Kraimer, M. L., Wayne, S. J., Liden, R. C., & Sparrowe, R. T. (2005). *The role of job security in understanding the relationship between employees' perceptions of temporary workers and employees' performance. Journal of applied psychology, 90(2), 389.*

Kurzweil, R. (2000). *The age of spiritual machines: When computers exceed human intelligence. Penguin.*

Lee, J., Davari, H., Singh, J., & Pandhare, V. (2018). *Industrial artificial intelligence for industry 4.0-based manufacturing systems. Manufacturing lEtters, 18, 20–23.*

Long, D., & Magerko, B. (2020). *What is AI literacy? Competencies and design considerations. Proceedings of the ACM Conference on Interaction Design and Children, 1(1), 1-12.*

Manyika, J., Chui, M., Miremadi, M., Bughin, J., George, K., Willmott, P., & Dewhurst, M. (2017). *A future that works: Automation, employment, and productivity. McKinsey Global Institute. Retrieved from https://www.mckinsey.com.*

Maslach, C., & Leiter, M. P. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it. Jossey-Bass.*

Mazmanian, M., Orlikowski, W. J., & Yates, J. (2013). *The autonomy paradox: The implications of mobile email devices for knowledge professionals. Organization science, 24(5), 1337-1357.*

McKinsey Global Institute. (2017). *Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation. McKinsey & Company. https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-.*

Misselhorn, C. (2018). *Artificial morality. Concepts, issues and challenges. Society, 55(2), 161–169.*

Nazareno, L., & Schiff, D. S. (2021). *The impact of automation and artificial intelligence on worker well-being. Technology in Society, 67, 101679. .*

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling Procedures: Issues and Applications. Sage.*

Ng, D. T., & Chu, K. W. (2021). *Conceptualizing AI literacy: An exploratory review. Computers and Education: Artificial Intelligence, 2, 100041.*

Ng, D. T., & Leung, J. K. (2021). *Developing AI literacy in K-12 education: Opportunities and challenges. Journal of Educational Technology, 18(3), 189-205.*

Ng, D. T., Leung, J. K., Chu, K. W., & Qiao, M. S. (2021). *AI literacy: Definition, teaching, evaluation, and ethical issues. Proceedings of the Association for Information Science and Technology, 84(1), 504-508.*

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

Nurski, L., & Hoffmann, M. (2022). *The impact of AI on job quality and labor market dynamics. European Labour Review, 58(4), 367-390.*

OECD. (2023). *The role of artificial intelligence in shaping job quality and labor market outcomes. OECD Employment Outlook 2023. Organisation for Economic Co-operation and Development. .*

OECD. (2024). *Governing AI: Balancing innovation and risk in the digital economy. OECD Digital Economy Papers, 320, 1-45.*

O'Neil. (2016). *Weapons of math destruction: How big data increases inequality and threatens democracy. Sci. Am, 315, 74-74.*

Orlikowski, W. J. (1992). *The duality of technology: Rethinking the concept of technology in organizations. Organization science, 3(3), 398-427.*

Pereira, V., Hadjielias, E., Christofi, M., & Vrontis, D. (2023). *A systematic literature review on the impact of artificial intelligence on workplace outcomes: A multi-process perspective. Human Resource Management Review, 33(1), 100857.*

Pratt, M. G., Rockmann, K. W., & Kaufmann, J. B. (2006). *Constructing professional identity: The role of work and identity learning cycles in the customization of identity among medical residents. Academy of management journal, 49(2), 235-262.*

Preacher, K. J., & Hayes, A. F. (2008). *Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behavior Research Methods, 40(3), 879–891.*

Preston, C. C., & Colman, A. M. (2000). *Optimal number of response categories in rating scales: Reliability, validity, discriminating power, and respondent preferences. Acta Psychologica, 104(1), 1–15.*

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.*

Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). *On the meaning of work: A theoretical integration and review.*

Rousseau, D. (1995). *Psychological contracts in organizations: Understanding written and unwritten agreements. Sage.*

Salanova, M., Llorens, S., & Cifre, E. (2013). *The dark side of technologies: Technostress among users of information and communication technologies. International Journal of Psychology, 48(3), 422–436.*

Schaufeli, H. B., & Salanova, M. (2010). *33 How to improve work engagement?. Handbook of employee engagement: Perspectives, issues, research and practice, 399.*

Soulami, M., Benchekroun, S., & Galiulina, A. (2024). *Exploring how AI adoption in the workplace affects employees: a bibliometric and systematic review. Frontiers in Artificial Intelligence, 7, 1473872.*

Spagnoli, P., Molino, M., Molinaro, D., Giancaspro, M. L., Manuti, A., & Ghislieri, C. (2020). *Workaholism and technostress during the COVID-19 emergency: The crucial role of the leaders on remote working. Frontiers in psychology, 11, 620310.*

Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes, and consequences. Sage Publications.*

Sullivan, Y., & Wamba, S. F. (2024). *Artificial intelligence and adaptive response to market changes: A strategy to enhance firm performance and innovation. Journal of Business Research, 174, 114500.*

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.*

Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). *The impact of technostress on role stress and productivity. Journal of Management Information Systems, 24(1), 301-328.*

Taris, T. W., & Kompier, M. A. (2006). *Games researchers play: Extreme-group analysis and mediation analysis in longitudinal occupational health research. Scandinavian Journal of Work, Environment & Health, 32(6), 463–472.*

The Guardian. (2025). *U.S. Internal Revenue Service announces workforce reduction due to AI adoption. Retrieved from https://www.theguardian.com.*

The Wall Street Journal. (2025). *OpenAI's Stargate project and its impact on local employment in Texas. Retrieved from https://www.wsj.com.*

Van Laar, D., Edwards, J. A., & Easton, S. (2007). *The Work-Related Quality of Life scale for healthcare workers. Journal of Advanced Nursing, 60(3), 325-333.*

Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2017). *Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. Computers in human behavior, 72, 577-588.*

Venkatesh, V., & Davis, F. D. (2000). *A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management science, 46(2), 186-204.*

Vial, G. (2019). *Understanding digital transformation. The Journal of Strategic Information Systems, 28(2), 118–144.*

Waizenegger, L., McKenna, B., Cai, W., & Bendz, T. (2020). *An affordance perspective of team collaboration and enforced working from home during COVID-19. European journal of information systems, 29(4), 429-442.*

Waizenegger, L., McKenna, B., Cai, W., & Bendz, T. (2020). *Team collaboration and remote working during COVID-19. European Journal of Information Systems, 29(4), 429–442.*

Xu, M., David, J. M., & Kim, S. H. (2018). *The fourth industrial revolution: Opportunities and challenges. International Journal of Financial Research. 90-95.*

APPENDIX – SURVEY QUESTIONNAIRE

Section: Adoption of Artificial Intelligence (AI) Technologies

Statements:

1. In our firm, AI tools and applications are used to automate time-consuming activities, including claim processing, basic customer-service interaction, and inventory tracking.
2. In our firm, AI tools and applications are used to save staff time by allowing them to focus on higher-value activities.
3. In our firm, AI tools and applications are used to automate routine as well as back-office tasks.
4. In our organization, AI tools and applications allow us to respond more quickly to changing stock or inventory levels.
5. In our organization, AI tools and applications allow us to test nearly all potential scenarios before making a decision and assess the efficiency of different decisions under different conditions.
6. In our organization, AI tools and applications allow us to enhance market prediction capabilities (e.g., next-best product or service a customer is likely to buy or the traffic in our stores/websites).
7. Our AI-based system offers various decision-making tools that enable us to manage our relationship with our customers.
8. Our AI-based system offers various tools, such as chatbots, that enable us to support our interactions with our customers and enable us to promptly address their queries.
9. Our AI-based system offers various tools that enable us to examine trends in the data for managing our interaction with our customers.

Section: Digital Stress in the Workplace

Statements:

1. I am forced by this technology to work much faster.
2. I am forced by this technology to do more work than I can handle.
3. I am forced by this technology to work with very tight time schedules.
4. I am forced to change my work habits to adapt to new technologies.
5. I have a higher workload because of increased technology complexity.
6. I spend less time with my family due to this technology.
7. I have to be in touch with my work even during my vacation due to this technology.
8. I have to sacrifice my vacation and weekend time to keep current on new technologies.
9. I feel my personal life is being invaded by this technology.
10. I do not know enough about this technology to handle my job satisfactorily.
11. I need a long time to understand and use new technologies.
12. I do not find enough time to study and upgrade my technology skills.
13. I find new recruits to this organization know more about computer technology than I do.
14. I often find it too complex for me to understand and use new technologies.
15. I feel constant threat to my job security due to new technologies.
16. I have to constantly update my skills to avoid being replaced.
17. I am threatened by coworkers with newer technology skills.
18. I do not share my knowledge with my coworkers for fear of being replaced.
19. I feel there is less sharing of knowledge among coworkers for fear of being replaced.
20. There are always new developments in the technologies we use in our organization.
21. There are constant changes in computer software in our organization.
22. There are constant changes in computer hardware in our organization.
23. There are frequent upgrades in computer networks in our organization.

Section: Impact of AI Technologies on Job Stability and Security

Statements:

1. I feel confident that I will be able to keep my current job despite the increasing use of AI technologies in my organization.
2. My organization's adoption of AI technologies will not reduce the number of hours I work each week.
3. If my organization faces economic challenges, AI technologies would not replace my role.
4. I believe that I will be able to work for my organization as long as I wish, even as AI adoption increases.
5. My job will remain secure, regardless of advancements in AI technologies.
6. If my job were eliminated due to AI adoption, my organization would provide me with another opportunity within the company.
7. I feel secure in my job, even with the growing implementation of AI technologies.
8. AI tools and systems do not threaten my job status within my organization.
9. I do not feel that AI adoption in my organization jeopardizes my role.
10. The use of AI technologies in my organization supports my role and helps me perform better.

Section: Work Environment and Overall Job Satisfaction

Statements:

1. I have a clear set of goals and aims to enable me to do my job effectively.
2. I feel empowered to voice my opinions and influence changes in my area of work.
3. I have ample opportunities to use my abilities at work.
4. I feel physically and mentally well in my current role.
5. My employer provides excellent facilities and flexibility to help me balance work and family life.
6. My current working hours and patterns align with my personal circumstances.

7. I am able to manage my workload effectively and feel in control of my responsibilities.
8. My contributions are regularly acknowledged and appreciated by my line manager.
9. I feel satisfied and content with my life overall.
10. I am regularly encouraged to develop new skills and grow professionally.
11. I am actively involved in decisions that affect me in my work area.
12. My employer provides all the resources I need to perform my job efficiently.
13. My line manager supports and promotes flexible working hours and patterns.
14. My life is fulfilling and aligned with my personal and professional aspirations.
15. I feel secure and supported in my work environment.
16. Things generally progress positively and smoothly for me at work.
17. I am pleased with the career development opportunities available to me.
18. I am able to maintain a healthy balance between work demands and personal well-being.
19. The training I receive enables me to excel in my current job.
20. My working conditions are comfortable, safe, and supportive.
21. I am engaged in meaningful decisions that impact members of the public through my work.
22. I am fully satisfied with the overall quality of my working life.