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Digital Workplaces:
Exploring their impact on employee well-being and the influence of cultural context.

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Introduction

INTRODUCTION

In recent years, the rapid advancement of technology has significantly reshaped traditional work environments, giving rise to what are now known as "digital workplaces". These digital environments leverage advanced technologies and online collaborative platforms to facilitate remote work, enhance productivity, and streamline communication within organizations. However, this transformation has not been without its challenges and implications, particularly concerning the well-being of employees.

This work seeks to explore the impact of digital workplaces on employee well-being, a topic of growing importance as organizations increasingly adopt these technologies. Based on an extensive review of existing literature, there is an indication that digital workplaces may have a detrimental effect on employee well-being. This potential negative impact can be attributed to several factors, including information overload, the blurring of boundaries between work and personal life, decreased face-to-face social interactions, and the pressure of constant connectivity and availability.

To gain a nuanced understanding of this phenomenon, the study analyses the impact of demographic and cultural variables on digitalization-wellbeing relationship.

Ultimately, the discussion of this thesis will offer practical recommendations based on the findings of the empirical analysis. The aim is to assess whether digital workplaces can be considered a positive or negative innovation. Additionally, if the analysis reveals that digital workplaces negatively impact employee well-being, the work will propose strategies to mitigate these adverse effects. These strategies may include the development of specific usage policies, the design of digital tools that better accommodate cultural differences, and the implementation of initiatives to promote employee well-being.

By addressing these aspects, this work aspires to contribute to the ongoing discourse on digital workplaces and provide insights that can help organizations create more supportive and effective work environments.

1. DIGITAL WORKPLACES AND WELL-BEING

1.1 Dynamics and challenges of defining the Digital Workplace

In the modern era of rapid technological advancement and evolving work practices, the concept of the digital workplace has emerged as a pivotal paradigm shaping the way organizations operate and employees engage with their work environment.

The digital workplace encompasses the integration of digital tools, technologies, and platforms within an organization's infrastructure to facilitate seamless collaboration, communication, and productivity across dispersed teams and diverse work settings. (De Moraes, da Cunha & Ramos, 2023) It transcends traditional office boundaries, enabling employees to work remotely, access information anytime, anywhere, and leverage digital resources to accomplish tasks efficiently.

While it is relatively easy to grasp practically what constitutes a digital workplace, providing an academic definition proves to be a more challenging endeavour. (Rakovic, Sakal & Matkovic, 2022). It is possible to identify three main reasons why it is difficult to provide a concise and universally accepted definition of the digital workplace.

Firstly, the term "digital workplace" has been used to describe a wide range of concepts and practices, encompassing various aspects of technology integration, organizational structure, and workplace culture. (Micic, Khamooshi, Raković & Matković, 2022). This lack of clear boundaries makes it challenging to define the digital workplace in a precise and unambiguous manner.

Secondly, rapidly advancing technologies and changing work practices continue to reshape the digital workplace landscape. (Li & Herd, 2017). This dynamic nature makes it difficult to pin down a fixed definition that remains relevant over time. Finally, the digital workplace is not merely a collection of tools or technologies; it is an interconnected ecosystem that encompasses various elements, including technology, people, processes, and organizational culture. (Haddud & McAllen, 2018). This complex and multifaceted nature makes it challenging to capture the essence of the digital workplace in a single definition.

The term "digital workplace" was initially introduced by Grantham and Nichol in 1993, within the context of the technological and organizational landscape of that time. They highlighted the interplay between technology, teamwork, and business processes, emphasizing their impact on customer satisfaction; their work laid the foundation for understanding the digital workplace and anticipating trends in digital business transformation.

In 2018, William and Schubert categorized digital workplace characteristics into three main headings: organizational strategy and design, employee-centric focus, and technology platforms. These

elements provide a framework for a comprehensive definition of the digital workplace, emphasizing its role in fostering a collaborative, flexible, and future-oriented work environment. (Williams & Schubert, 2018)

Among these categories, organizational strategy and design are highlighted as pivotal for orchestrating cultural shifts and optimizing work processes within an organization. This strategic approach necessitates careful planning to align the digital workplace with overarching organizational goals and ensure compliance with relevant laws and regulations. Additionally, the employee-centric focus underscores the importance of fostering employee engagement, productivity, and collaboration, thereby driving innovation and organizational success. Finally, the technological aspect emphasizes the integration of digital tools and platforms to support seamless communication, knowledge sharing, and flexible work practices.

Contemporary definitions of the digital workplace vary in scope, ranging from purely technological integration to broader concepts encompassing knowledge exchange, productivity, and employee well-being. (Kissmer, Knoll, Stieglitz & Gross, 2018). Researchers emphasize the need for a holistic approach that goes beyond mere technology adoption, focusing on enabling autonomy and connectivity among employees.

Meske and Junglas affirm that the concept of the digital workplace refers to a phenomenon where the integration of new technologies brings about substantial transformations across various dimensions of work. These transformations include alterations in how employees carry out their tasks, modifications in work processes, and shifts in their interpersonal dynamics within the organization, ultimately leading to a gradual evolution in the overall work environment. (Meske & Junglas, 2021). They argue that the impact of workplace technologies on "change" is determined by individual employee perceptions and not all workplace technologies will result in the same outcomes, as highlighted by prior research. (Meske & Junglas, 2021)

Given the inherent uniqueness of organizations, a significant change may appear entirely different for one organization compared to another. Employees' perceptions of change, such as alterations in personal processes, shifts in social relations, or changes in user experience, serve as manifestations that transformation is occurring.

They emphasize the need for forthcoming studies to delve into the micro-level intricacies of digital transformation. This entails scrutinizing the effects of digital transformation, investigating potential adverse outcomes at the individual level, including phenomena like negativity and technological stress, and their influence on employee satisfaction.

1.2. Unleashing Potential: Benefits of Digital Workplaces

Having established a contextual understanding of digital workplaces, we now turn our attention to the multifaced advantages they afford within contemporary organizational contexts.

At their core, digital technologies facilitate unprecedented levels of connectivity, transcending geographical boundaries and enabling seamless communication and collaboration among team members regardless of their location. (Bordi, Okkonen, Mäkiniemi & Heikkilä-Tammi, 2018)

This enhanced connectivity reshapes the dynamics of modern work environments, fostering collaboration and streamlining workflows. Through instant messaging, video conferencing, and virtual collaboration platforms, teams can communicate and collaborate in real time, regardless of physical distance. (Walsh, 2019).

Moreover, digital connectivity promotes inclusivity within organizations, breaking down barriers to communication and facilitating interactions among diverse teams and individuals. By transcending physical distances, digital connectivity cultivates a sense of unity and cohesion among team members (Marlowe, Bartley, & Collins, 2017), strengthening relationships and enhancing collaboration effectiveness. The pervasive impact of digital connectivity reshapes the way organizations communicate, collaborate, and operate in the digital era.

Increased connectivity not only fosters stronger relationships and teamwork but also plays a pivotal role in expediting decision-making processes within organizations (Leeb, Mortara, Felicini, Phaal & Moncur, 2023). By facilitating real-time communication and collaboration among team members, digital connectivity enables rapid exchange of information and ideas, thereby accelerating the decision-making cycle.

In traditional work environments, decision-making often involves lengthy processes of information gathering, coordination, and consensus-building, which can be hindered by geographical barriers and communication delays. However, in digital workplaces characterized by enhanced connectivity, decision-makers have immediate access to relevant data and insights, allowing them to make informed decisions more swiftly. (Sivarajah, Irani, Gupta & Mahroof, 2020).

The seamless flow of communication enables stakeholders to collaborate effectively in real time, reducing the time required for deliberation and increasing the agility of decision-making processes. (Gomez-Trujillo & Gonzalez-Perez, 2021)

This heightened agility and responsiveness to market dynamics are crucial in today's fast-paced business environment, where organizations must adapt quickly to changing conditions and seize emerging opportunities to maintain competitiveness. (Mergel, Edelmann & Haug, 2019)

Therefore, the increased connectivity facilitated by digital technologies not only strengthens relationships and teamwork but also enhances organizational agility and responsiveness, ultimately driving sustained success in the digital era.

Digital workplaces offer a fertile ground for creativity to flourish, as they provide knowledge workers with the essential tools, resources, and collaborative environments needed to cultivate and exchange innovative ideas. (Kissmer, Knoll, Stieglitz & Gross, 2018). Through the integration of digital technologies, such as instant messaging, virtual collaboration platforms, and online brainstorming tools, digital workplaces facilitate seamless idea sharing, brainstorming sessions, and experimentation.

This seamless flow of communication and idea exchange fosters a culture of innovation within organizations, where employees are empowered to explore new concepts, collaborate on projects, and drive forward-thinking initiatives. By leveraging the capabilities of digital technologies, digital workplaces become catalysts for creativity, driving organizational growth and success in today's dynamic and competitive landscape.

The implementation of digital workplaces offers significant contributions to sustainability efforts, as evidenced by the reduction in commuting, paper usage, and waste generation. (Yalina & Rozas, 2020). By enabling employees to work remotely and reducing the need for daily commutes, digital workplaces help mitigate carbon emissions associated with transportation, contributing to a commute-less environment. Furthermore, the transition to paperless operations within digital workplaces minimizes paper consumption and waste, thereby preserving natural resources and reducing environmental impact. The overall waste-less approach of digital workplaces promotes resource optimization and waste reduction, aligning with principles of environmental sustainability.

Implementing digital workplace concepts can lead to significant budget efficiencies and transportation cost savings, further underscoring the environmental benefits of this approach. (Yalina & Rozas, 2020).

Digital workplaces offer a compelling alternative for enhancing global environmental sustainability, demonstrating the potential for organizations to embrace innovative solutions that prioritize both operational efficiency and ecological responsibility.

Lastly, the digitization of work processes promotes greater flexibility, allowing employees to transcend traditional constraints of time and place. By embracing remote work options and flexible scheduling, organizations can empower their workforce to achieve a healthier work-life balance and optimize their productivity.

1.3. Work Flexibility I: The Era of Smart Working

With the advent of digital workspaces, the traditional boundaries of the workplace have become increasingly fluid, enabling employees to collaborate and perform tasks remotely with greater ease. This shift towards digitalization has prompted a reevaluation of traditional work arrangements, leading to a growing emphasis on work flexibility.

As organizations embrace digital technologies to facilitate communication and productivity, the concept of work flexibility has gained traction as a means of optimizing employee engagement and performance. Understanding the interconnectedness of digital workspaces and work flexibility is essential for navigating the evolving landscape of modern work environments.

Work flexibility, as defined by Hill, encompasses a multifaceted approach to how employees engage with their work environment. It involves the ability for individuals to vary not only the time and location in which they work but also the amount of work undertaken and the nature of tasks performed. (Hill, Jeffrey, et al.,2008)

This comprehensive understanding of flexibility highlights its temporal, locational, and task-based dimensions, emphasizing the diverse ways in which employees can tailor their work arrangements to suit their needs. By acknowledging these various aspects, organizations can better accommodate the preferences and requirements of their workforce while fostering a more adaptable and responsive work environment.

In line with the multifaceted nature of work flexibility, the demand for flexible work arrangements (FWAs) reflects the diverse needs and preferences of employees. (Kumar, Sarkar & Chahar, 2023).

Employees advocate for flexibility across various dimensions, ranging from time and location to the nature and quantity of work; this demand is driven by individual circumstances, such as childcare responsibilities, caregiving duties, or educational pursuits, underscoring the need for tailored FWA options. (Kumar, Sarkar & Chahar, 2023). The primary objective of utilizing flexibility is to allocate more time for family and personal matters, thereby mitigating conflicts between work and personal life. (Hofäcker & König, 2013).

FWAs can be categorized into time, place, and work-quantity flexibility, with their availability contingent upon organizational factors like resources, technology, culture, and employer attitudes. (Earl & Taylor, 2015).

Thus, the integration of FWAs aligns with the overarching goal of accommodating diverse employee needs and fostering a more adaptable and responsive work environment.

The nature of work flexibility extends beyond individual preferences to encompass broader organizational dynamics that influence the development and implementation of flexible work arrangements. (Kumar, Sarkar & Chahar, 2023).

As outlined by the factors contributing to the perceived usability of FWAs, employees encounter various challenges that impact their ability to effectively utilize flexible options. Discrimination in promotions and earnings, particularly for employees opting for FWAs, creates apprehension surrounding job security and financial stability, thus limiting the accessibility of flexible work options for some individuals. (Bloom et al., 2015).

Additionally, psychological barriers rooted in the ideal worker image perpetuate concerns about professional commitment and opportunities for those who do not adhere to traditional full-time schedules. Gender dynamics further exacerbate disparities, with unequal treatment and privileges for employees based on marital status and caregiving responsibilities. (Munsch, 2016)

Individual competencies and self-efficacy play a pivotal role in determining the success of FWAs, highlighting the importance of addressing attitudinal shifts and providing support for effective boundary management. By acknowledging and addressing these multifaceted factors, organizations can foster a work environment that not only accommodates diverse employee needs but also promotes inclusivity, equity, and overall well-being (Kumar, Sarkar & Chahar, 2023).

The evolution of work flexibility has gained significant momentum in modern workplaces, reflecting an increasing desire for autonomy and control over work setups. Employees now seek the freedom to choose where and when they work, with flexible work arrangements at various locations and schedules playing a central role. In the convergence of work and personal life, technology serves as a vital enabler of this transition towards adaptable work patterns.

The advent of high-speed internet and smartphones has revolutionized how individuals engage with their professional and personal spheres. The integration of technology has blurred the traditional boundaries between work and personal life (Haeger & Lingham, 2014): tasks previously confined to office desktops, like email management, can now be effortlessly handled on mobile devices, while platforms like Skype enable virtual meetings, transcending geographical barriers. (Bélanger, Watson-Manheim & Swan, 2013).

This evolution has given rise to the concept of smart working, which encompasses flexible time schedules, work locations, and work periods throughout the workweek. Smart working has garnered widespread appeal among both employers and employees across various job categories.

Smart working extends beyond mere flexibility in work arrangements or remote work. It emphasizes the clear definition of objectives and tasks. In this context, workers are expected to have clearly defined goals, and the tasks assigned to them should directly align with these objectives. This approach makes it different from more "static" forms of remote e-working (Iannotta, Meret & Marchetti, 2020). Understanding the importance of setting clear objectives is crucial in optimizing efficiency and productivity in various organizational settings.

Smart working is increasingly seen as a driver of innovation in organizations, providing employees with the autonomy to explore new ideas and engage in creative problem-solving. By enabling collaboration among remote teams and overcoming geographical barriers, smart working fosters an environment that promotes innovation and knowledge exchange. (Yilmaz, 2024).

Its allure lies in its potential to optimize productivity while accommodating the diverse needs and preferences of modern workers. By embracing smart working practices, organizations can foster a more adaptable and dynamic work culture, wherein employees have the autonomy to structure their work in a manner that best suits their individual circumstances. (Angelici & Profeta, 2024).

As organizations increasingly harness digital technologies to enable remote work and enhance collaboration, the synergy between digital workspaces and work flexibility becomes evident.

Digital platforms and tools empower employees to seamlessly transition between different modes of work, whether they are working from home, on the go, or in traditional office settings.

This integration of technology not only facilitates greater autonomy and control over work schedules but also promotes efficiency and innovation. By leveraging digital workspaces to support flexible work arrangements, organizations can unlock new opportunities for productivity and creativity while simultaneously promoting work-life balance. Thus, the alignment of digital workspaces with the principles of work flexibility represents a fundamental paradigm shift in how work is conceptualized and executed in the contemporary era.

1.4 Unpacking Wellbeing: Definitions and Dimensions

We have examined the advantages of digital workplaces in terms of operational efficiency and environmental sustainability; now it is important to focus on employee well-being. The flexibility and freedom offered by the digitization of work processes not only optimize business performance but can also have a significant impact on employees' quality of life.

Before proceeding, it is imperative to establish a comprehensive understanding of the concept of well-being, as it has been delineated across diverse academic disciplines. Within the realms of international development, anthropology and political science, scholars have offered nuanced interpretations.

Human well-being can be defined as a state of harmonious coexistence with others and the environment, characterized by the fulfillment of human needs, meaningful pursuit of goals by individuals and communities, and the attainment of a satisfactory quality of life (Breslow et al., 2016). This definition encompasses both social and ecological systems, emphasizing the interconnectedness of human welfare with environmental sustainability.

From another perspective the concept of well-being expands to encompass not only economic or material factors but also subjective elements and perceptions such as happiness or job satisfaction.

Well-being is so defined "as a way of being with others that arises when people and ecosystems are healthy, and when individuals, families, and communities equitably practice their chosen ways of life and enjoy a self-defined quality of life now and for future generations" (Donkersloot et al.,2020).

In some cases the definition of well-being is framed around "outcomes that matter to people," meaning that well-being is understood and evaluated based on the factors and aspects of life that are important and meaningful to individuals and communities. Instead of imposing predefined criteria or metrics, this approach acknowledges the subjective nature of well-being and emphasizes the significance of factors that directly impact people's lives and experiences. (OECD, 2020).

The World Health Organization defines 'well-being' as a fundamental resource for a healthy life and a positive state of health that goes beyond merely the absence of illness. It encompasses the ability to function well in various domains: psychologically, physically, emotionally, and socially. Essentially, well-being is about empowering individuals to realize their potential, work effectively and creatively, build positive relationships, and contribute meaningfully to their communities (Foresight Mental Capital and Wellbeing Project, 2008).

In the literature, specific types of well-being are often referenced, each contributing to the overall concept of well-being.

Psychological Well-Being pertains to an individual's ability to manage their thoughts and behaviors in a healthy and balanced manner. It includes aspects such as self-esteem, resilience, and the ability to cope with stress and challenges (Ryff & Singer, 2008; Ryff & Keyes, 1995; Huppert, 2009; Kubzansky et al., 2023).

Emotional Well-Being refers to the ability to recognize, understand, and manage one's emotions. Good emotional well-being involves having a positive outlook on life, being able to experience a full range of emotions, and maintaining emotional balance. (Fredrickson & Joiner, 2002; Hanley, Winter & Burrell, 2020; Schutte et al., 2002).

Physical Well-Being concerns the health of the body and includes factors such as nutrition, physical exercise, sleep, and the absence of illness. Good physical well-being allows individuals to have the energy needed to tackle daily activities and maintain a high quality of life. (Peterson & Bossio, 2001; Withall et. al, 2014).

Social Well-Being refers to the ability to create and maintain positive and meaningful relationships with others. It includes community participation, social support, and the sense of belonging to a group. (Blanco & Diaz, 2007; Keyes, 1998; Samad, Nilashi & Ibrahim, 2019)

These aspects of well-being are interconnected and contribute in an integrated way to an individual's overall well-being.

In the context of digital workplaces, it is essential to recognize how technology can positively or negatively impact each of these aspects, and to implement strategies that promote a healthy and sustainable balance for all employees.

Numerous analysts have underscored the positive impacts of flexible working arrangements on health and well-being. These benefits include decreased stress and stress-related illnesses, lower rates of sickness absence, and enhanced work-life balance, which encompasses more time with children and greater marital satisfaction (Albertson, 2008; MacEachen, 2008).

Although flexible working, a key feature of the digital workplace, is expected to positively influence well-being, existing literature reveals that digitalization also brings several negative aspects, particularly regarding employee stress, anxiety and burnout.

1.5 Reveling the Complexities of Digital Workspaces

Alongside the manifold benefits of digital workspaces, there is a growing recognition of their darker undercurrents. The intensification of digital working, accelerated by the exigencies of the COVID-19 pandemic, has brought to the forefront a pressing need to interrogate the unintended negative consequences of digital workplace technologies.

A recent integrative review (Marsh, Perez Vallejos & Spence, 2022) offers valuable insights into this discourse, compelling scholars and practitioners to delve deeper into the complexities of the digital work experience.

Marsh's analysis elucidates a nuanced understanding of the adverse effects stemming from pervasive digitalization, particularly in relation to employees' holistic digital work experiences.

Chief among these is the phenomenon of technostress, an increasingly prevalent condition precipitated by the incessant utilization of digital technologies.

The concept of technostress has garnered increasing attention within psychological discourse, denoting the psychological strain resulting from negative encounters with modern digital tools. Initially conceptualized as a maladaptive response to the challenges posed by emerging computer technologies (Brod, 1984), technostress has been subject to further refinement.

Tarafdar et al. proposed a categorization of technostress creators, including techno-overload, techno-complexity, techno-insecurity, techno-uncertainty, and techno-invasion. (Tarafdar, Pullins & Ragu-Nathan , 2007). Subsequent empirical studies have identified additional stressors such as techno-unreliability, technological workplace surveillance, and stress in human-machine interaction. (Dragano & Lunau, 2020)

Table 1 shows the different categories of technostress at work.

<u>Table 1:</u> Summary of different categories of technostress creators at work

Techno-overload	When work with digital technologies is demanding because of a high pace, frequent interruptions, multitasking, prolonged working time, expectations in regard to response times in digital communication, etc.
Techno-complexity	Certain digital technologies tend to be highly complex and challenge the workers concentration, qualification, feeling of control, and deserve additional time in handling complexity
Techno-insecurity	Fear of job loss or of a degradation in status caused by the perception that digital technologies or more qualified personnel will fully or partly replace the own job/position
Techno-uncertainty	A constant feeling of uncertainty and ambiguity caused by chronic digital transformation processes or by features of single technologies which foster constant change
Techno-invasion	Mobile devices enable high flexibility, which can blur boundaries between work and other life domains, causing work-life-conflicts and impair recovery from work
Techno-unreliability	Stress induced by breakdowns, technical errors, low usability etc. of single technologies (related to techno-overload and – complexity)
Stress in human–machine interaction	Irritation because of unpredictability of robot or machine behaviour or unspecific anxiety towards robots, high complexity of such systems (see techno-complexity)
Technological workplace surveillance	New technologies enable a close monitoring of work performance, location and working times, which can provoke distrust and loss of control in the monitored workers

Source: Dragano & Lunau, 2020.

Technostress manifests as a complex interplay of psychological and physiological symptoms, including heightened irritability, pervasive anxiety, and even clinical depression. This state of constant connectivity and reliance on digital tools not only engenders a sense of cognitive overload but also fosters a pervasive feeling of being constantly tethered to work obligations, even beyond traditional working hours.

Furthermore, the pervasive adoption of digital devices in the workplace has paved the way for the emergence of anxiety disorders among employees. This form of anxiety is characterized by an incessant preoccupation with meeting work-related demands and maintaining proficiency in navigating the ever-evolving digital landscape. The relentless pressure to stay abreast of technological advancements and demonstrate proficiency in utilizing digital tools exacerbates this anxiety, often leading to a debilitating cycle of self-doubt and apprehension regarding one's competence and job security.

The insidious nature of excessive digital device usage extends beyond mere psychological distress to encompass the pernicious phenomenon of dependency. (Lambert, Rome & Fornari, 2023) Individuals afflicted by digital dependency exhibit a compulsive need to engage with digital technologies incessantly, even in situations where such engagement is superfluous or detrimental to their well-being. This compulsive behavior not only detracts from individuals' ability to effectively disconnect and recharge but also precipitates a host of mental health issues, including heightened anxiety and chronic stress.

In contemporary digital workplaces, the pervasive influence of technology further exacerbates these challenges, intensifying the pressure to remain constantly connected.

Addressing digital dependency and preserving humanity in an algorithmic era involves the development of heightened awareness concerning digital habits and efforts to limit the excessive use of digital technologies (Lambert, Rome & Fornari, 2023).

Moreover, the ubiquitous presence of digital devices in the workplace has ushered in a new era of workplace distractions and interruptions, posing formidable challenges to sustained productivity and task focus. The incessant barrage of notifications, emails, and instant messages serves as constant sources of diversion, undermining individuals' ability to concentrate on essential tasks and deliver optimal outcomes (Puranik, Koopman & Vough, 2020). Consequently, the quality and efficiency of work suffer, perpetuating a vicious cycle of diminished productivity and escalating stress levels.

Ultimately, the cumulative impact of excessive digital device usage can culminate in the debilitating phenomenon of burnout (Ter Hoeven, Van Zoonen & Fonner, 2016) —a pervasive malaise characterized by emotional exhaustion, disengagement from work responsibilities, and a profound sense of diminished efficacy.

The incessant demands of the digital workplace, coupled with the erosion of boundaries between professional and personal domains, exact a heavy toll on individuals' mental and emotional well-being, precipitating a downward spiral of diminished motivation and professional disillusionment.

The multifaceted challenges arising from excessive digital device usage in the workplace bear a striking resemblance to the nuanced dynamics elucidated in the seminal study on the autonomy paradox published in 2013. (Mazmanian, Orlikowski & Yates, 2013) Indeed, these issues were presciently anticipated by the findings of Mazmanian's research, which underscored the tension between the perceived autonomy afforded by digital technologies and the escalating demands for continual connectivity and accessibility.

Mazmanian's investigation reveals a profound paradox inherent in the adoption of mobile email devices by knowledge professionals. At first glance, these devices seem to offer individuals unparalleled flexibility, peace of mind, and control over their work-related interactions. However, the reality Mazmanian uncovers is far more complex. While individuals initially perceive their use of mobile email devices as a means of asserting personal autonomy, their continual connectivity and accessibility inadvertently reinforce collective expectations of constant availability. This perpetual engagement diminishes the professionals' capacity to disconnect from work, blurring the boundaries between personal and professional life.

Central to findings is the notion of professionals navigating the tension between their desire for personal autonomy and their professional obligations to colleagues and clients. The very actions individuals take to demonstrate their autonomy—using mobile email devices to work anywhere and

anytime—ultimately erode their autonomy in practice. This tension highlights the inherent conflict between individual autonomy and organizational demands within the contemporary workplace.

Furthermore, the research uncovers a myriad of unintended consequences stemming from the autonomy paradox. While professionals may perceive themselves as autonomous and responsible, the collective shift towards an "always-on" work culture redefines the norms of acceptable work behavior. This shift not only challenges traditional notions of professional autonomy but also reshapes the expectations and behaviors of workers in the digital age.

The prevalence of technostress, anxiety disorders, and dependency among employees mirrors the paradoxical nature of autonomy in the digital age, wherein individuals' purported freedom to work anytime, anywhere paradoxically diminishes their actual autonomy in practice. Similarly, the pervasive distractions and interruptions wrought by excessive digital device usage serve to exacerbate the erosion of individuals' autonomy over their time and cognitive resources, perpetuating a cycle of diminished control and heightened stress levels.

The paradoxical effects of autonomy in the digital age, alongside the challenges posed by technostress and dependency, underscore the complex relationship between digitalization and employee well-being. While flexible work arrangements hold the promise of enhanced autonomy, the reality often involves a loss of control and increased stress levels. Recognizing these complexities is crucial for organizations seeking to promote employee well-being in the digital era.

2. CULTURAL PERSPECTIVES ON DIGITAL WORKPLACES AND FLEXIBILITY

2.1 Exploring Cultural Perspectives on Work Approach

In today's interconnected and globalized world, cultural diversity is not merely a facet of society but a defining characteristic of the modern workforce. As individuals from various cultural backgrounds come together in multinational organizations, understanding how cultural differences shape attitudes and behaviors in the workplace becomes paramount.

The dynamic interplay between individuals hailing from varied cultural contexts brings to light a tapestry of perspectives, values, and approaches that significantly influence the dynamics of the modern workplace.

Cultural differences manifest not only in explicit practices and traditions but also in the subtleties of communication styles, decision-making processes, and conflict resolution mechanisms (Stahl & Maznevski, 2021). A comprehensive exploration of these nuances is vital for fostering effective teamwork and ensuring the seamless functioning of multinational organizations.

This chapter explores the complex relationship between work and culture, emphasizing how the idea and method of work change in various cultural situations.

Central to our comprehensive exploration of the intricate interplay between work and culture is the Hofstede model, a seminal framework that has revolutionized our understanding of cultural differences.

Originating from the insights of Dutch social psychologist Geert Hofstede, this model provides an sophisticated lens through which we can analyze and comprehend the multifaceted dimensions along which cultures diverge.

2.2 Hofstede Model: Understanding Cultural Dimensions

Hofstede's seminal approach explores multiple cultural dimensions, each of which reflects a distinct facet of societal norms and values. These dimensions include power distance, individualism vs. collectivism, motivation towards achievement and success, uncertainty avoidance, and long-term vs. short-term orientation (Hofstede, 2001).

Examining these characteristics allows us to get important insights into how cultural subtleties affect people's perceptions of and interactions with their work within the variegated fabric of the contemporary workplace.

- Power Distance

This dimension reflects the extent to which individuals in a society accept hierarchical structures and power differentials. Cultures with high power distance tend to accept and even endorse unequal distribution of power. Subordinates expect clear direction from superiors and are less likely to challenge or question decisions made by those in positions of power (Daniels. & Greguras, 2014). Conversely, in cultures with low power distance, there is a preference for flatter organizational structures and a more egalitarian distribution of power. Individuals feel comfortable expressing their opinions, even to those in higher positions, and decision-making processes may be more participative and consensus-driven (Amin, Hamidah & Gunawan, 2020).

- Individualism vs. Collectivism

This dimension explores the balance between individual interests and the collective welfare within a society. Cultures that lean towards individualism emphasize the importance of personal autonomy, self-expression, and achievement (Azmi, Ma'rof, Abdullah, & Zarimohzzabeih,, 2023). Individuals are encouraged to pursue their own goals and interests, prioritize personal success, and maintain a degree of independence from social groups.

In contrast, cultures characterized by collectivism prioritize the welfare of the group over individual desires (Sun, 2024). Harmony, cooperation, and loyalty to the community or family unit are valued, and individuals may be expected to sacrifice personal goals for the greater good of the collective.

- Motivation towards achievement and success

Previously, this dimension was referred to as "Masculinity vs. Femininity." However, it has been renamed to "Motivation towards achievement and success" to better capture the underlying dynamics it represents. This change in terminology reflects a shift from framing the dimension solely in terms of gender roles to focusing on the cultural values associated with motivation and success.

This dimension examines the degree to which a culture values motivation towards achievement and success over qualities traditionally associated with nurturance and empathy. Cultures with a motivation towards achievement tend to prioritize assertiveness, competitiveness, and success, often measuring success in terms of material wealth, status, and career advancement (Pucheta-Martínez, M. C., & Gallego-Álvarez, I., 2024). There may be a greater emphasis on roles traditionally associated with assertiveness and competitiveness.

Conversely, cultures with a motivation towards nurturance and empathy prioritize qualities such as collaboration, consensus-building, and work-life balance. These cultures value qualities traditionally associated with femininity and emphasize the importance of empathy and quality of life over strict hierarchical structures and status symbols.

- Uncertainty Avoidance

This dimension reflects the extent to which individuals in a society feel uncomfortable with ambiguity, uncertainty, and risk. Cultures with high uncertainty avoidance exhibit a strong discomfort with ambiguity and unpredictability. These societies tend to establish rigid rules, norms, and procedures to minimize uncertainty and maintain stability and order (Alipour, 2019).

In contrast, cultures with low uncertainty avoidance are more tolerant of ambiguity, change, and experimentation. They may embrace innovation, flexibility, and adaptability, and individuals may feel less constrained by strict rules and regulations (Stephan, 2022).

- Long-Term Orientation vs. Short-Term Orientation

This dimension distinguishes between cultures that prioritize long-term goals versus those that focus on short-term gratification (Hofstede & Bond, 1988). Cultures with a long-term orientation prioritize future rewards, perseverance, and sustainability. They value thrift, perseverance, and a focus on long-range planning. (Nguyen, Dung, Minh, Quynh, & Ngan, 2023).

Conversely, cultures with a short-term orientation prioritize immediate results, tradition, and fulfillment of present needs over long-term planning. They may place less emphasis on saving for the future and be more inclined towards indulgence and tradition.

- Indulgence vs. Restraint

This dimension explores the extent to which individuals within a society indulge in their impulses and desires versus exercising restraint. Cultures characterized by indulgence tend to prioritize the gratification of desires and impulses. Enjoyment of life, freedom of expression, and tolerance for diverse lifestyles are valued, and individuals may feel less constrained by societal norms and expectations (Hofstede et al., 2010).

In contrast, cultures characterized by restraint emphasize the importance of self-discipline, moderation, and adherence to social norms. There may be a greater emphasis on self-control, thrift, and adherence to traditional values and practices.

To operationalize Hofstede's cultural dimensions and make them more measurable, researchers have devised scoring systems that assign numerical values to each dimension. These scores provide a quantitative framework for understanding and comparing cultural differences across different countries or groups. By quantifying these dimensions, researchers can analyze how cultural values impact various aspects of behavior, attitudes, and societal structures. These scores serve as valuable tools for cross-cultural research, facilitating the identification of patterns and trends that help elucidate the complexities of cultural diversity on a global scale.

Scores for these dimensions are typically updated following publication in reputable scientific journals. However, for countries not covered in such publications, scores are derived through additional studies or commercial projects conducted by certified practitioners and research teams. Table 2 summarizes the Hofstede scores for 36 countries, including EU Member States, the United Kingdom, Norway, Switzerland, Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, and Serbia. [1] This selection of countries has been made in virtue of their relevance for the empirical study that will be developed in the next chapter. The scores for Cyprus are not available online, but they have been inputed based on the available literature (Stavrou-Costea, Eisenberg & Charalambous, 2006).

Table 2: Hofstede's Scores

Country	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation	Indulgence
Austria	11	77	79	70	47	63
Belgium	65	81	54	94	61	57
Bulgaria	70	50	40	85	51	16
Croatia	73	42	40	80	40	33
Cyprus	75	42	58	115	59	
Czech Republic	57	70	57	74	51	29
Denmark	18	89	16	23	59	70
Estonia	40	62	30	60	71	16
Finland	33	75	26	59	63	57
France	68	74	43	86	60	48
Germany	35	79	66	65	57	40
Greece	60	59	57	100	51	50
Hungary	46	71	88	82	45	31
Ireland	28	58	68	35	51	65

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[1] The scores mentioned in the table are published on the "Hofstede Insights" website and are subject to regular updates. The latest available update is on October 16, 2023. For further information and access to the most recent data, please refer to the official website: https://www.hofstede-insights.com/country-comparison-tool.

Country	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation	Indulgence
Italy	50	53	70	75	39	30
Latvia	44	70	9	63	69	13
Lithuania	42	55	19	65	49	16
Luxembourg	40	60	50	70	64	56
Malta	56	59	47	96	47	66
Netherlands	38	100	14	53	67	68
Poland	68	47	64	93	49	29
Portugal	63	59	31	99	42	33
Romania	90	46	42	90	32	20
Slovakia	100	57	100	51	53	28
Slovenia	71	81	19	88	50	48
Spain	57	67	42	86	47	44
Sweden	31	87	5	29	52	78
Albania	90	27	80	70	56	15
Bosnia and Herzegovina	90	40	48	87	36	44
North Macedonia	90	40	45	87	35	35
Montenegro	88	27	48	90	40	20
Serbia	86	42	43	92	37	28
Norway	31	81	8	50	55	55
Switzerland	34	79	70	58	42	66
United Kingdom	35	76	66	35	60	69

2.3 Hofstede Model: Application in work environment

The effect of Hofstede's cultural dimensions on the workplace has been the subject of numerous studies highlighting their strong correlation with work characteristics (Amin, Hamidah, & Gunawan, 2020; Azmi, Ma'rof, Abdullah, & Zarimohzzabeih, 2023; Sun, 2024; Pucheta-Martínez & Gallego-Álvarez, 2024; Alipour, 2019; Stephan, 2022; Plijter, van der Voordt, & Rocco, 2014; Gu, Wang, Liu, Song, & He, 2018).

In the comparative analysis of these studies, power distance and individualism-collectivism seem to have strongest impact on workplace attributes, emerging as pivotal dimensions (Plijter, van der Voordt, & Rocco, 2014).

Analyzing the impact of power distance on workplace dynamics, it becomes evident that this cultural dimension permeates various facets of organizational functioning. These encompass employee involvement, job delineations, communication modalities, decision-making procedures, management oversight, ethical conduct, and structural adjustments within organizations (Gu et al. 2018).

The influence of power distance extends beyond organizing the formal hierarchy within a workplace. It seeps into the fabric of informal interactions and societal norms, shaping individuals' understanding of their duties and obligations.

In environments characterized by significant power distance, individuals may internalize deferential behaviors, conforming to established power structures even in informal settings. This can impact how decisions are made, how feedback is received, and how conflicts are resolved, ultimately shaping the culture and dynamics of the organization.

Power distance is characterized by the extent to which authority figures exert control over their subordinates, significantly influencing employee engagement and performance within the organizational structure (Hofstede, 2001).

In high power distance cultures, where managers exert considerable control, employees may exhibit greater deference to authority and adhere strictly to established norms and procedures (Hobman, Bordia, & Gallois, 2003). This can lead to a more task-oriented approach to work, with employees prioritizing obedience and adherence to instructions over autonomy and creativity.

Conversely, in low power distance cultures, where authority is more evenly distributed, employees may feel more empowered to voice their opinions, challenge existing practices, and participate actively in decision-making processes (Huang, de Vliert & der Vegt, 2005). This can foster a culture of innovation and collaboration, potentially enhancing organizational performance and adaptability (Aryee et al., 2007). In this context, the impact of power distance seems to diminish over time, due to the adoption of more transparent and flexible workspace designs, which promote greater horizontal communication and collaboration (Steelcase, 2009).

Furthermore, the impact of power distance on employee engagement cannot be overstated. Employees in high power distance cultures may experience diminished job satisfaction and engagement due to feelings of disempowerment and lack of autonomy (Chen, Tsui, and Farh 2002). The hierarchical structure inherent in high power distance cultures may create barriers to open communication, limit opportunities for innovation and growth, and foster a climate of fear or resentment among employees. Organizations operating within such contexts may struggle to retain talent, maintain morale, and adapt to changing market demands. This can result in decreased loyalty towards the organization and a higher likelihood of turnover, ultimately undermining organizational performance (Irangani, Liu & Gunesekera, 2020).

In addition to the concept of power distance, it is imperative to acknowledge the strong influence of individualism and collectivism on the dynamics of the work environment.

Studies indicate that individuals who lean towards individualism may face challenges ingroup settings, potentially experiencing lower performance levels, whereas those embracing collectivist values often excel in collaborative work environments (Earley, 1993). Furthermore, cultural backgrounds heavily influence preferences for work-group structures, with individuals from hierarchical cultures showing a preference for structured teams, while those from individualistic backgrounds tend to gravitate towards more voluntary and informal arrangements (Perkins, 1993).

The strategic importance of teamwork and competitive assignments cannot be overstated in the context of many business organizations. It is essential to recognize the significance of understanding how cultural diversity impacts the effectiveness of such work arrangements. Research examining group tasks among various ethnic groups within the U.S. has underscored that individuals from collectivist cultural backgrounds typically exhibit more cooperative behavior compared to their counterparts from individualistic cultural origins (Cox, 1991). This emphasizes the critical importance of considering cultural diversity in managerial decision-making processes, particularly when designing effective work arrangements and striving to optimize team performance.

By acknowledging and leveraging the influence of individualism and collectivism, organizations can cultivate inclusive environments that foster productivity and collaboration (Amaram, 2007)

Consideration of individualism and collectivism is crucial not only for understanding the nuances of organizational dynamics but also for the successful implementation of merit pay systems in multinational organizations and government entities (Adamovic, Jan. 2023).

Researches (Hysom & Fişek, 2011; James, 2015; Otto et al., 2011; Ramamoorthy et al., 2019; Silva & Caetano, 2016) suggest that when it comes to determining what is fair or equitable in terms of rewards or recognition within a work environment, individualistic and collectivistic employees may have different priorities or preferences. For individualistic employees, who tend to prioritize personal

achievement and autonomy (Azmi,, Ma'rof, Abdullah, & Zarimohzzabeih, 2023), fairness may be perceived through a meritocratic lens. In other words, they believe that rewards should be based primarily on their individual performance and accomplishments in completing assigned tasks or responsibilities. Thus, they prefer a system where rewards are distributed based on how well they perform their assigned duties, often referred to as task performance-based equity (Adamovic, Jan. 2023).

On the other hand, collectivistic employees place greater emphasis on group harmony and cooperation. They may view fairness in terms of the overall contribution they make to the collective success of the team or organization, beyond just their assigned tasks. This broader view of fairness considers contributions such as helping colleagues, sharing knowledge, or supporting team objectives—commonly referred to as extra-role performance. Therefore, collectivistic employees may prefer a reward system that recognizes and rewards these extra-role contributions, known as extra-role performance-based equity (Adamovic, Jan. 2023).

Adding to the array of dimensions impacting the work environment is the concept of masculinity-femininity. It goes beyond the distribution of gender roles within society, influencing how individuals interact and perceive their roles in the workplace. In societies characterized by masculinity, traits such as competitiveness and a focus on achievement tend to prevail, fostering a culture of assertiveness and material success (Manrai, Manrai, Lascu, & Friedeborn. 2019). Conversely, in more feminine societies, values such as cooperation, empathy, and work-life balance are prioritized within the workplace, promoting teamwork and relationship-building.

Another dimension to consider is uncertainty avoidance, which reflects a society's tolerance for ambiguity and risk. Individuals in high uncertainty avoidance cultures frequently aim to minimize uncertainty by implementing formal regulations, standards, and norms to regulate their work. This approach establishes clear guidelines concerning tasks and objectives, fostering predictability in the workplace. Such individuals typically prefer a structured work environment that provides stability, and they may exhibit skepticism towards change. Innovations or new proposals are often met with resistance as they introduce uncertainty by questioning established practices and norms (Adamovic, Jun 2023).

On the contrary, individuals with a low uncertainty avoidance orientation are comfortable working in uncertain environments marked by frequent changes (Hofstede et al., 2010). They typically do not require explicit job descriptions to perform effectively. Instead, they favor autonomy and flexibility in the workplace, seeing them as catalysts for their own spontaneity and creativity. Often, rules and norms are viewed as hindrances, impeding their ability to work efficiently and swiftly (Adamovic, Jun 2023).

The dimension of long-term orientation versus short-term orientation influences how societies approach time and planning (Hofstede et al., 2010). Cultures with a long-term orientation emphasize perseverance and future planning, fostering patience and goal-oriented behavior in work environments (Venaik, Zhu, & Brewer, 2013). In contrast, cultures with a short-term orientation prioritize immediate results and stability, leading to a focus on meeting short-term targets and adapting quickly to changes.

Indulgence versus restraint is another dimension that shapes work environments. In indulgent cultures, there is a greater acceptance of pleasure-seeking and self-expression, contributing to a work environment that emphasizes employee well-being and work-life balance. Conversely, in restrained cultures where individuals have a perception that their actions are restrained by various social norms and prohibitions, there is less freedom to indulge in leisure activities and spending (Eternod, 2021). This cultural context influences workplace dynamics, with restrained cultures prioritizing self-discipline and adherence to societal norms, leading to work environments characterized by professionalism and adherence to rules, while indulgent cultures promote a more relaxed approach to work-life balance.

2.4 National culture influences firms' digitalization

Recent research (Rubino, Vitolla, Raimo, and Garcia-Sanchez, 2020) highlights that these dimensions play a crucial role in shaping not only the general work environment but also its adaptation to the digital age. The study delves into the cross-country differences in digitalization among European firms, with a particular focus on the role of national culture. It aims to explore how various dimensions of national culture influence the level of digitalization within firms across different countries. Upon analysis of the data, the study uncovers several noteworthy findings.

Firstly, it reveals a negative and significant relationship between masculinity and the level of firms' digitalization. This is explained by the fact that assertiveness, ambition, and materialism may hinder the adoption of digital technologies within firms (Rubino et al., 2020), even though previous literature (Rhyne et al., 2002) suggested masculinity driving success-oriented behavior and innovation. This discrepancy could stem from the emphasis on relationships and trust in fostering innovation, traits more closely associated with femininity (Kaasa and Vadi, 2010).

A negative relationship was also found between uncertainty avoidance and firms' digitalization, underscoring the impact of cultural attitudes towards uncertainty and risk (Rubino et al., 2020). High uncertainty avoidance, characterized by a low tolerance for ambiguity and a preference for strict rules and regulations, inhibits the implementation of innovative digital processes (Allred and Swan, 2004).

Conversely, cultures with lower uncertainty avoidance scores are more open to change and risk-taking, facilitating the adoption of digital technologies (Erez and Nouri, 2010; Bradley et al., 2013). These findings highlight the intricate interplay between cultural dimensions and digitalization strategies within firms. While masculinity and uncertainty avoidance may have been traditionally associated with success and stability, respectively, in the context of digital transformation, their influence appears to be counterproductive. Understanding these nuances is crucial for firms operating in diverse cultural contexts as it enables them to tailor their digitalization strategies accordingly.

The empirical analysis suggests a significant and positive correlation between indulgence and a country's level of digitalization. This finding aligns with previous literature on the cultural dimension of indulgence. Indulgence pertains to the extent to which individuals in a culture prioritize fulfilling their immediate desires and impulses over adhering to strict societal norms.

Previous studies have shed light on the relationship between indulgence and various outcomes, including innovation and technology adoption. It was noted a positive association between indulgence and innovation levels, suggesting that cultures inclined towards indulgence may foster a more conducive environment for innovative endeavors (Griffith and Rubera, 2014). Societies characterized by high levels of indulgence tend to adapt more readily to new technologies, indicating a propensity for embracing change and experimentation (Syed and Malik, 2014).

Drawing from these insights, it can be argued that indulgent cultures may exhibit a greater openness to digitalization initiatives. The propensity to prioritize enjoyment of life and fulfill immediate desires may translate into a willingness to explore new technologies and innovative solutions. Consequently, individuals and organizations operating within indulgent cultures might display higher levels of creativity and a greater propensity for digital adoption.

Conversely, contrary to expectations, the study finds a negative and significant relationship between individualism and the degree of digitalization. In individualistic cultures, individuals are expected to make decisions autonomously, potentially leading to increased entrepreneurial behaviors (Allred and Swan, 2004; Bradley et al., 2013), creative idea generation (Erez and Nouri, 2010), and innovation (Griffith and Rubera, 2014; Desmarchelier and Fang, 2016). However, despite these theoretical expectations, the study uncovers a counterintuitive association between individualism and digitalization. This finding challenges conventional wisdom and suggests that other factors may influence the relationship between cultural dimensions and technology adoption within firms.

Interestingly, power distance is found to have no significant impact on the level of digitalization.

These results emphasize the intricate interaction between national cultural dimensions and the integration of digital technologies within organizations, underscoring the necessity of incorporating cultural considerations into digitalization strategies.

In essence, the research highlights the nuanced dynamics between national culture and digital transformation, providing valuable guidance for businesses aiming to navigate the complexities of digitalization across diverse cultural landscapes.

2.5 Impact of workplace digitalization on wellbeing: hypotheses introduction

In the preceding chapter, we explored the intricacies of defining and understanding the digital workplace, unraveling both its benefits and complexities. Through this examination, it became evident that the increasing digitalization of the workplace poses several challenges. Of particular concern is the pervasive phenomenon of technostress, which manifests as psychological and physical strain stemming from the relentless use of digital technologies. Moreover, we discussed the rise of anxiety disorders among employees, driven by the pressure to keep pace with technological advancements and demonstrate proficiency in utilizing digital tools. Additionally, we scrutinized the risk of digital dependence, which fosters a perpetual state of connectivity and an obsessive focus on maintaining technological competency.

Shifting our focus to the realm of well-being, we propose to investigate the impact of workplace digitalization on individuals' overall sense of well-being. Specifically, we hypothesize that individuals in countries with a higher degree of workplace digitalization may experience lower levels of well-being.

H1: Individuals in countries with a higher level of workplace digitalization report a lower level of well-being.

Previous research has illuminated how cultural dimensions such as individualism versus collectivism, uncertainty avoidance, and power distance influence attitudes and behaviors towards technology adoption and usage. Therefore, investigating how these cultural dimensions interact with workplace digitalization can offer a more comprehensive understanding of well-being dynamics across different cultural contexts. By integrating cultural factors into our analysis, we aim to unveil the mechanisms through which cultural values shape individuals' well-being experiences in digitally advanced workplaces. This holistic approach will contribute to both theoretical advancements in the field of well-being research and practical implications for effectively managing workplace digitalization within diverse cultural settings.

Building upon these insights, we propose additional hypotheses regarding the moderation of Hofstede's dimensions in the impact of workplace digitalization on well-being. Following, we will articulate our arguments.

Hofstede's dimension "motivation toward achievement and success," reflects the extent to which a society values competition, personal achievement, and professional success. In highly digitalized environments, where technologies can intensify workload and performance pressure, the negative impact on employees' well-being may be amplified in cultures with a high motivation toward success. In such cultures, employees may feel compelled to intensively use digital tools to achieve their goals, at the expense of their work-life balance and psychological well-being. Conversely, in cultures with low motivation toward success, individuals might be less inclined to sacrifice their well-being to meet digitally mediated objectives, thus mitigating the negative impact of digitalization.

H2: The negative relationship between workplace digitalization and well-being strengthens in countries with higher levels of motivation toward achievement and success.

In countries with high uncertainty avoidance, individuals tend to feel uncomfortable with ambiguity and strive for stability and predictability. In highly digitalized workplaces, where rapid technological changes and constant connectivity can create a sense of unpredictability and overwhelm, the negative impact on employees' well-being may be more pronounced in such cultures. Employees in high uncertainty avoidance cultures might experience higher stress and anxiety due to the continuous need to adapt to new digital tools and processes, leading to a deterioration in their overall well-being. Conversely, in countries with low uncertainty avoidance, individuals are more accustomed to ambiguity and change, potentially reducing the stress and negative impact associated with workplace digitalization.

H3: The negative relationship between workplace digitalization and well-being strengthens in countries with higher levels of uncertainty avoidance

In countries with high indulgence, where there is a strong emphasis on leisure time, personal gratification, and individual freedom, the negative relationship between workplace digitalization and employee well-being may be weakened. This is because, in such cultural contexts, individuals prioritize personal autonomy and enjoyment over strict adherence to societal norms. Consequently, they may be less inclined to feel pressured by the demands imposed by digital technologies in the workplace. Instead, they may view technology as a tool to enhance their personal freedom and flexibility, rather than as a source of stress or control.

Moreover, in cultures with a high level of indulgence, there may be a greater tolerance for diverse lifestyles and behaviors, leading to less societal pressure to conform to specific technological norms or expectations. Individuals in these societies may feel more empowered to adapt digital tools to their own preferences and needs, rather than feeling constrained by external standards or conventions.

Conversely, in countries characterized by high restraint, where there is a stronger emphasis on conformity, self-discipline, and adherence to social norms, the negative relationship between workplace digitalization and employee well-being may be strengthened. In such cultures, individuals may feel more obligated to conform to established technological standards and practices, even if they experience increased stress as a result. The pressure to adhere to societal expectations and norms regarding technology usage may exacerbate feelings of stress and reduce overall well-being among employees in these societies.

H4: The negative relationship between workplace digitalization and well-being weakens in countries with higher levels of indulgence

In cultures that prioritize individualism, there exists a profound emphasis on personal agency and self-determination within both social and professional spheres. Within this cultural framework, individuals often seek to maintain a sense of autonomy and control over their own lives, including their work environments. Consequently, when digitalization is introduced into the workplace, individuals in such cultures may perceive it not only as a tool for enhancing efficiency but also as a means of empowering themselves to exert greater control over their work processes and schedules. Furthermore, the inclination towards individual autonomy may drive individuals to actively seek out ways to leverage digital tools to tailor their work experiences to better suit their preferences and needs. This proactive approach to integrating technology into their work routines could further contribute to a sense of empowerment and control, thereby bolstering overall well-being.

H5: The negative relationship between workplace digitalization and well-being weakens in countries with higher levels of individualism

Power distance is expected to moderate the relationship between workplace digitalization and well-being. While the hierarchical structure of power within a culture may not directly influence technology adoption in modern workplaces (Rubino, Vitolla, Raimo, and Garcia-Sanchez, 2020), it could still moderate the relationship between digitalization and well-being. Specifically, in cultures characterized by high power distance, where there is a greater acceptance of hierarchical authority, the negative relationship between digitalization and well-being may be intensified. This could be because individuals in such cultures may feel more pressure to adapt to digital technologies as directed by higher authority figures, leading to increased stress and worry. Conversely, in cultures with low power distance, where there is less emphasis on hierarchical authority, the negative relationship between digitalization and well-being may be less pronounced.

H6: The negative relationship between workplace digitalization and well-being strengthens in countries with higher levels of power distance

In cultures characterized by a long-term orientation, where there is a strong emphasis on perseverance, thriftiness, and adapting to change for future rewards, the negative impact of digitalization on well-being may be alleviated. This could be because individuals in such cultures are more likely to view digital tools as instrumental in achieving long-term goals, such as career advancement or organizational success, leading to a more positive perception of their usage.
Conversely, in cultures with a short-term orientation, where there is a focus on immediate gratification and maintaining tradition, the negative relationship between digitalization and well-being may be exacerbated. The emphasis on immediate results and tangible outcomes in short-term oriented cultures may lead to unrealistic expectations regarding the benefits of digitalization. When these expectations are not met or when the transition to digital tools does not yield immediate improvements in productivity or job satisfaction, individuals may experience disappointment or disillusionment, further diminishing their well-being.

H7: The negative relationship between workplace digitalization and well-being strengthens in countries with higher levels of long-term orientation.

These secondary hypotheses aim to elucidate the intricate interplay between cultural dimensions and workplace digitalization in shaping employees' well-being, thereby providing deeper insights into the complex dynamics at play in contemporary work environments.

3. EMPIRICAL ANALYSIS

3.1 Methods

In this section, we will outline the methodology employed to investigate the hypotheses outlined in the previous chapter.

This research aims to examine how digitalization influences three aspects associated with well-being; employees' propensity between work hours and non-work time to worry about work, ability in maintaining concentration during tasks that can effectively be executed while at work, feelings of tiredness from their job.

The primary analytical tool employed is multilevel linear regression, also known as hierarchical linear modeling (HLM) or mixed-effects modeling. This technique is particularly suited for the hierarchical structure of the data, where individual employees (level 1) are nested within countries (level 2).

Multilevel linear regression is chosen for several reasons. Firstly, it allows for the inclusion of predictors at both the individual and country levels, providing a comprehensive analysis of how digitalization impacts well-being across different cultural contexts. By accounting for the nested structure of the data, this method controls for potential intraclass correlation within groups, thus producing more accurate standard errors and significance tests compared to traditional regression techniques.

In the first level of the analysis, the relationship between workplace digitalization and employee well-being is investigated, using demographics as control variables. In the second level, the study examines the moderating effects of Hofstede's cultural dimensions, such as power distance, individualism vs. collectivism, motivation toward achievement and success, uncertainty avoidance, long-term orientation, and indulgence vs. restraint. These cultural dimensions are incorporated as level-2 predictors to investigate how they influence the strength and direction of the relationship between digitalization and well-being at the individual level.

The multilevel approach is advantageous as it allows for the examination of cross-level interactions. This means that it can explore how the macro-level cultural environment affects micro-level individual experiences. Such an approach provides deeper insights into the context-dependent nature of digitalization's impact on well-being, recognizing that employees in different cultural settings may experience and react to digitalization in diverse ways.

Additionally, the study controls for potential confounding variables, such as demographic factors (age, gender) and work related indicators (number of job, seniority). This comprehensive modeling ensures that the observed relationships and moderating effects are not spuriously driven by these confounders.

3.2 Data collection

In this section, we will elucidate the process of data collection for our study. The final database utilized in our analysis was meticulously curated, beginning with the European Working Conditions Survey (EWCS) 2021 dataset as its foundational cornerstone.

The EWCS, or European Working Conditions Survey, is a comprehensive research initiative conducted by the European Foundation for the Improvement of Living and Working Conditions (Eurofound). It aims to provide a detailed understanding of working conditions and the quality of employment across Europe. The survey collects data on various aspects of work, including employment patterns, working hours, job satisfaction, health and safety and work-life balance. (Ipsos NV, Belgium, 2021; Parent-Thirion et al., 2016; Parent-Thirion et al., 2007)

The EWCS commenced in 1990–1991 and is conducted periodically, with surveys typically carried out every five years, allowing researchers to track trends and changes in working conditions over time. By gathering data from a large and diverse sample of workers across European countries, the survey provides valuable insights into the state of employment and work-related well-being in the region. (Parent-Thirion et al., 2016; Parent-Thirion et al., 2007)

The EWCS employs a rigorous methodology involving face-to-face interviews with a diverse pool of employed individuals across EU countries. This approach ensures a comprehensive representation of the working population, encompassing both employees and the self-employed. (Ipsos NV, Belgium, 2021)

Throughout its history, the EWCS has undergone several iterations, with Institut Public de Sondage d'Opinion Secteur (Ipsos)[4] spearheading the execution of the seventh edition in 2020. However, the onset of the COVID-19 pandemic necessitated an abrupt halt to face-to-face fieldwork after just nine weeks. In response, Eurofound initiated a transition phase, tasking Ipsos with assessing the feasibility of shifting from traditional face-to-face interviews to Computer Assisted Telephone Interviewing (CATI) (Ipsos NV, Belgium, 2021).

This transition aimed to adapt to the new circumstances while maintaining the integrity and reliability of the survey methodology.

Subsequent phases of the research focused on meticulous preparation and seamless implementation of the EWCTS 2021, marking a significant shift in data collection strategies prompted by the unprecedented challenges posed by the pandemic. The preparation phase involved adapting the

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[4] A polling institute established in 1975 and headquartered in Paris, is one of the largest companies globally in the market research sector. It specializes in providing services in six main areas: advertising communication, marketing, media, opinion polls and social research, Customer Relationship Management, and data collection and management.

questionnaire, materials, and procedures to CATI methodology, including a pilot test across all surveyed countries. The implementation phase encompassed pilot fieldwork, interviewer training, mainstage fieldwork, quality control, data validation, weighting, dataset production, and methodological reporting (Ipsos NV, Belgium, 2021).

The EWCS 2021 took place across 36 nations, including all member states of the European Union, six countries in the process of candidacy or potential candidacy (Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro, and Serbia), in addition to Norway, Switzerland, and the United Kingdom (UK).

The European Working Conditions Survey (EWCS) 2021 employed telephone interviews as its primary method for data collection. Interviews were conducted in the respondent's native language by trained professionals who adhered to strict protocols. Extensive pre-interviewer training ensured that interviewers were well-versed in survey methodology, questionnaire administration, and data quality control procedures. Each interview lasted approximately 30 minutes. (Ipsos NV, Belgium, 2021).

To maintain data accuracy and reliability, several quality control measures were implemented. These included monitoring interviews in real-time, reviewing completed questionnaires for errors, and editing responses to rectify any inconsistencies or missing data. (Ipsos NV, Belgium, 2021).

Additionally, weighting was applied to the data to adjust for non-response and ensure the sample's representativeness across various demographic factors like age, sex, and education level. Adjustments were made to account for differing sampling rates among countries, preventing under-representation in the final analysis. (Ipsos NV, Belgium, 2021).

These rigorous measures collectively safeguarded the integrity of the survey findings, providing valuable insights into European working conditions and sustainability practices.

Table 3 shows the number of interviews targeted, achieved, and finalized after quality checks for the survey conducted in EU Member States.

Table 3: Interview Targets, Achievements, and Final Counts by Country

Country	Target (foreseen prior to fieldwork)	Achieved Interviews	Final number of interviews achieved after all quality checks
EU Member States			
Austria	1800	2113	1779
Belgium	4200	4260	4233
Bulgaria	1800	1809	1796
Croatia	1800	1801	1800
Cyprus	1300	2833	1365
Czechia	1800	3046	1990
Denmark	1800	1826	1820
Estonia	1800	1817	1804
Finland	1800	1909	1903
France	3200	3215	3213
Germany	4100	4527	4131
Greece	1800	1803	1798
Hungary	1800	1804	1792
Ireland	1800	1801	1785
Italy	3100	3137	3131
Latvia	1800	1810	1799
Lithuania	1800	1894	1871
Luxembourg	1300	1377	1363
Malta	1300	1479	1472
Netherlands	1800	1818	1816
Poland	2900	2914	2900
Portugal	1800	2148	1880
Romania	1800	1831	1808
Slovakia	1800	2332	1794
Slovenia	2622	3074	2631
Spain	2900	2908	2903
Sweden	1800	1833	1826

Country	Target (foreseen prior to fieldwork)	Achieved Interviews	Final number of interviews achieved after all quality checks
Total EU	**57522**	**63119**	**58408**
Candidates and Potential Candidates (CPC)			
Albania	1000	1268	989
Bosnia and Herzegovina	1000	1154	1140
Kosovo	1000	1143	1134
Montenegro	1000	1152	1148
North Macedonia	1000	1141	1137
Serbia	1000	1153	1149
Total CPC	**6000**	**7011**	**6697**
Other Countries			
Norway	3295	3307	3300
Switzerland	1100	1232	1224
United Kingdom	2100	2136	2134
Total Other Countries	**6495**	**6675**	**6659**
TOTAL ALL COUNTRIES	**70017**	**76805**	**71758**

Source: Ipsos NV, Belgium. (2021). *Working conditions and sustainable work: European Working Conditions Telephone Survey 2021: Technical report*.

To augment our dataset and incorporate cultural dimensions, we integrated data obtained from Hofstede's cultural dimensions scores. These scores, presented in the previous chapter offer a systematic framework for understanding cultural differences across countries. By incorporating these scores into our database, we were able to examine the influence of cultural dimensions on our research variables.

3.3 Data Description

The empirical analysis of this study is based on a specific set of variables extracted from the European EWCS. These variables were selected and, in some cases, modified to better suit the study's objectives. The modifications made allowed for the construction of indices measuring workplace

digitalization and employee well-being in a more precise and relevant manner. Additionally, essential control variables were included to ensure the validity of the results.

This section will explain in detail how these variables were prepared and adapted for the analysis. The careful selection and preparation of these variables enable a detailed examination of the relationship between workplace digitalization and employee well-being, taking into account the possible influences of demographic and professional factors.

3.3.1 Independent Variable: Digitalization Index

The independent variable in this study is the digitalization index, which was created based on several key variables from the EWCS. This index aims to capture the extent to which digital technology is integrated into the workplace and its influence on employees' daily activities. The digitalization index combines multiple dimensions of digital technology usage to provide a comprehensive measure of workplace digitalization.

Use of Digital Devices

The variable "computer" assesses the frequency of engagement with digital devices, including computers, laptops, tablets, and smartphones, within the primary job responsibilities. Participants were asked to rate the extent of their interaction with these devices on a scale ranging from "Never" to "Always." A response of "Never" corresponds to a value of 1, indicating rare or no usage of digital devices in the workplace. Conversely, a response of "Always" corresponds to a value of 5, signifying frequent and consistent utilization of digital tools. In cases where respondents were unsure or declined to provide an answer, codes such as -888 ("DK") and 999 ("Refusal") were assigned, allowing for the differentiation of missing data from valid responses.

This variable offers valuable insight into the level of integration of digital technology into the work routines of participants, thereby contributing to the comprehensive assessment of workplace digitalization within the context of the study.

In the recoding process, the original variable "computer" was transformed into a new variable named "new_computer." The purpose of this recoding was to ensure that the variable aligns with the subsequent analytical steps and accurately reflects the intended measurement of digitalization.

The recoding procedure specified that responses labeled as "Never" (1) remain unchanged as "1," responses labeled as "Rarely" (2) and "Sometimes" (3) are both recoded as "2," responses labeled as "Often" (4) remain unchanged as "4," and responses labeled as "Always" (5) remain unchanged as "5." Additionally, any other responses not falling within these categories were coded as missing values (".") to maintain data integrity.

It's important to note that in this case, the recoding process did not involve substantial alterations to the variable itself. Instead, it aimed to streamline the variable for subsequent analysis by ensuring that "new_computer" does not include numeric values associated with responses such as "Don't Know" or "Refused." This step is crucial for maintaining the accuracy and consistency of the data throughout the analytical process.

Influence of digital tools

The variable "influence_computer" measures the extent to which computerized systems impact the tasks performed by employees in their jobs. Participants rated this influence on a scale from "To a large extent" to "Not at all." Specifically, a response of "To a large extent" corresponds to a value of 1, indicating a significant influence of computerized systems on their work. A response of "To some extent" corresponds to a value of 2, "Not much" corresponds to a value of 3, and "Not at all" corresponds to a value of 4. Additionally, a response of "This doesn't apply to my work situation" was also included in the original scale but recoded for analysis.

The recoding process transformed these responses to better align with the study's objectives. The values were recoded such that "To a large extent" became 4, "To some extent" became 3, "Not much" became 2, and "Not at all" became 1. Responses that did not fit these categories were coded as missing values to maintain the integrity of the analysis. The recoded variable, named "new_influence_computer," thus provides a clearer metric for understanding the degree to which computerized systems affect employees' work activities, essential for constructing the digitalization index.

Teleworkability

The variable "teleworkable_type" is an external variable extrapolated from the work of Sostero et al. (2020) based on ISCO codes. This variable assesses the teleworkability of different job roles, categorized based on the necessity for social interaction. The original categories are: "Not teleworkable, high social interaction" (1), "Not teleworkable, low social interaction" (2), "Teleworkable, high social interaction" (3), and "Teleworkable, low social interaction" (4).

For the purposes of this study, the variable was recoded to simplify the analysis and align with the objectives of measuring digitalization. The recoding process transformed the original categories into a binary classification: jobs that are not teleworkable (both high and low social interaction) were coded as 1, and jobs that are teleworkable (both high and low social interaction) were coded as 2. This recoded variable, named "new_teleworkable_type," thus provides a clearer distinction between teleworkable and non-teleworkable jobs.

By recoding "teleworkable_type" in this manner, the analysis focuses on the broader capacity for telework, regardless of the level of social interaction required in the job. This recoding is crucial for constructing the digitalization index, as it helps to quantify the potential for remote work, an essential aspect of workplace digitalization.

The digitalization index was constructed by combining three recoded variables: the frequency of digital device usage ("new_computer"), the extent to which computerized systems influence work ("new_influence_computer"), and the teleworkability of the job ("new_teleworkable_type").
This index provides a composite measure of digitalization within the workplace, as perceived by the respondent. It captures the multifaceted nature of digitalization by incorporating the regularity with which employees use digital devices, the degree of influence that computerized systems have on their work activities, and the potential for jobs to be performed remotely. By integrating these variables, the digitalization index offers a comprehensive indicator of how deeply digital technologies are embedded in various job roles. This index is crucial for analyzing the relationship between workplace digitalization and employee well-being, as it reflects the overall digital environment that employees navigate in their professional activities.

3.3.2 Dependent Variable: Well-being Index

The dependent variable in this study is the well-being index, which was created based on three key variables from the EWCS. This index aims to capture the overall well-being of employees by incorporating various aspects of their work and personal lives. The well-being index includes variables such as worry, tiredness, and concentration, which represent different dimensions of well-being—emotional, physical, and psychological.

Worry

The variable "wlb_worry" assesses the extent to which respondents worry about work when they are not working. Participants were asked to rate their level of worry on a scale ranging from "Never" to "Always." Specifically, a response of "Never" corresponds to a value of 1, "Rarely" corresponds to a value of 2, "Sometimes" corresponds to a value of 3, "Often" corresponds to a value of 4, and "Always" corresponds to a value of 5. Additional responses such as "Don't know," "Refused," and "Not applicable" were also included in the original scale.
For the purposes of this study, the variable was recoded to better suit the analysis of well-being. The recoding process assigned new values to the original responses: "Always" was recoded to 1, "Often" to 2, "Sometimes" to 3, "Rarely" to 4, and "Never" to 5. Responses such as "Don't know," "Refused,"

and "Not applicable" were coded as missing values to maintain the integrity of the analysis. This recoded variable, named "new_wlb_worry," provides a clearer measure of work-related worry and its impact on well-being.

By recoding "wlb_worry" in this manner, the analysis focuses on the inverse relationship between the frequency of worrying about work and the level of well-being. This recoding is crucial for constructing a comprehensive measure of well-being, as it helps to quantify the negative impact of work-related stress on employees' overall quality of life.

Tiredness

The variable "wlb_tired" assesses the extent to which respondents feel too tired after work to perform necessary household tasks. Participants rated their level of tiredness on a scale ranging from "Never" to "Always." Specifically, a response of "Never" corresponds to a value of 1, "Rarely" corresponds to a value of 2, "Sometimes" corresponds to a value of 3, "Often" corresponds to a value of 4, and "Always" corresponds to a value of 5. Additional responses such as "Don't know," "Refused," and "Not applicable" were also included in the original scale.

For the purposes of this study, the variable was recoded to better align with the analysis of well-being. The recoding process assigned new values to the original responses: "Always" was recoded to 1, "Often" to 2, "Sometimes" to 3, "Rarely" to 4, and "Never" to 5. Responses such as "Don't know," "Refused," and "Not applicable" were coded as missing values to maintain the integrity of the analysis. This recoded variable, named "new_wlb_tired," provides a clearer measure of the impact of post-work fatigue on well-being. By recoding "wlb_tired" in this manner, the analysis aims to highlight the impact of post-work fatigue on well-being. This approach ensures that higher levels of fatigue correspond to lower well-being scores. The recoding is essential for developing a nuanced measure of well-being, as it captures how exhaustion from work affects employees' ability to complete household tasks and maintain a healthy work-life balance. This variable is crucial for understanding the broader implications of work-related tiredness on personal life and overall quality of life.

Concentration

The variable "wlb_concentration" assesses the difficulty respondents experience in concentrating on their job due to family responsibilities. Participants rated their level of difficulty on a scale ranging from "Never" to "Always." Specifically, a response of "Never" corresponds to a value of 1, "Rarely" corresponds to a value of 2, "Sometimes" corresponds to a value of 3, "Often" corresponds to a value of 4, and "Always" corresponds to a value of 5. Additional responses such as "Don't know," "Refused," and "Not applicable" were also included in the original scale.

For the purposes of this study, the variable was recoded to better reflect the analysis of well-being. The recoding process assigned new values to the original responses: "Always" was recoded to 1, "Often" to 2, "Sometimes" to 3, "Rarely" to 4, and "Never" to 5. Responses such as "Don't know," "Refused," and "Not applicable" were coded as missing values to ensure the accuracy of the analysis. This recoded variable, now termed "new_wlb_concentration," offers a refined metric for assessing the impact of family responsibilities on work concentration. The adjusted coding scheme emphasizes the frequency of concentration challenges arising from familial duties, with higher scores indicating less frequent difficulties.

This variable serves as a vital tool for exploring the broader effects of work-life balance on job performance, job satisfaction, and overall quality of life. It enables researchers to discern the nuances of the work-life interface and its implications for employees' professional and personal spheres.

The creation of the "wlb_index" marks a significant step in synthesizing various dimensions of well-being within the European Working Conditions Survey (EWCS) dataset. This composite index amalgamates three key aspects—namely, concerns about work (new_wlb_worry), post-work fatigue (new_wlb_tired), and difficulty in concentrating on tasks due to family responsibilities (new_wlb_concentration). By aggregating these variables, the "wlb_index" offers a holistic measure that encapsulates the multifaceted nature of well-being in the workplace. This index provides researchers with a comprehensive tool for quantifying the overall well-being of employees, accounting for both psychological and physical dimensions. Moreover, it enables a nuanced understanding of the interplay between work-related stressors and personal life demands, shedding light on their combined impact on individuals' overall quality of life.

3.3.3 Control Variables

Introducing control variables such as age, gender, number of jobs, employment status and seniority is essential in a study employing multilevel linear regression. These variables play a crucial role in providing a comprehensive and accurate picture of the relationships under examination, allowing for the control of any factors that may inadvertently influence the results.

Firstly, age is a significant factor to consider as it can influence various aspects of workers' well-being. For instance, it is reasonable to hypothesize that older individuals may have a different perception of well-being compared to younger workers, in addition to facing age-specific challenges and concerns such as health and retirement planning. The variable, termed "new_age," was created to refine the analysis of respondents' ages. The original data included an open-ended response for age, allowing participants to provide their age in years. However, some respondents might have opted to

refuse or omit this information, which could introduce bias or inaccuracies into the analysis. To address this, the "new_age" variable was generated, ensuring that responses categorized as "refusal" were not considered.

Gender is another important variable to include, as significant differences may exist between men and women regarding work experiences and well-being. Gender disparities in the workplace, such as pay, advancement opportunities, and family responsibilities, can impact well-being perception and work outcomes. The variable used to capture gender in this study is "gender_recoded." This variable has been recoded to consider only two valid responses: "male" and "female." Responses outside of these categories, such as "other" or "prefer not to say," have been excluded from the analysis. By utilizing "gender_recoded" in this manner, the study focuses specifically on the binary classification of gender as male or female, aiming to explore any potential differences or associations within these two groups in relation to the variables under investigation.

The variable used to delineate individuals' employment status is "empstat_dual." This variable serves to differentiate between two primary categories: "employee" and "self-employed." The distinction between these categories is pivotal for understanding the diverse landscape of work arrangements and their potential implications for various outcomes under investigation. Individuals classified as "employees" typically work under an employment contract with an organization or employer, receiving wages or salaries in exchange for their services. On the other hand, those categorized as "self-employed" are individuals who work for themselves and are not directly employed by an organization. They may operate their own businesses, work as independent contractors, or be sole proprietors of their ventures.

Analyzing employment status allows researchers to explore how different work arrangements may influence various aspects of individuals' lives, including their well-being, job satisfaction, income levels, and access to benefits.

The number of jobs, or having multiple jobs simultaneously, can be a significant stress factor for workers and may affect their overall well-being. Juggling multiple employments may entail an excessive workload, work-life balance issues, and increased vulnerability to the negative effects of digitalization and work-related stress. The variable "number_jobs_filter" serves as a constructed indicator within the study, delineating whether a respondent holds one or multiple jobs. This binary variable categorizes respondents based on whether they are engaged in either a single job or multiple jobs concurrently.

Lastly, seniority, or work tenure, can be an important indicator of experience and job stability. Individuals with greater seniority may have a different perception of well-being compared to new hires and may have increased access to organizational resources and social support, which can

influence their work-related well-being. The variable "seniority" serves as a fundamental metric to gauge the length of time individuals have spent in their respective companies or organizations. Understanding the tenure of employees within their current workplace is crucial for evaluating various aspects of their professional experiences and potential implications on outcomes under scrutiny. To refine the analysis and ensure data accuracy, a new variable termed "new_seniority" was created, filtering out responses categorized as "Not applicable," "Don't know," or "Refused."

In summary, including these control variables in multilevel linear regression is crucial to ensure that the effects of digitalization on workers' well-being are accurately and robustly assessed, accounting for potentially confounding factors that may influence study outcomes.

Table 4 presents the descriptive statistics for the key variables used in this study. It includes measures of central tendency (mean), dispersion (standard deviation), and distribution shape (kurtosis and skewness) for each variable. These statistics are essential for understanding the characteristics of the data set and ensuring the appropriateness of subsequent multilevel linear regression analyses.

Table 4: Descriptive Statistics of Key Variables

Variable	Min	Max	Mean	Std. Dev.
Gender	1	2	1.48	0.50
Age	16	88	41.96	12.31
employment status	1	2	1.13	0.33
Number of jobs	1	2	1.10	0.30
Seniority	1	88	10.85	9.91
Worry	1	5	3.28	1.24
Tiredness	1	5	3.29	1.11
Concentration	1	5	3.91	1.00
wellbeing index	1	5	3.49	0.82
use of computer	1	5	4.10	1.44
Influence of computer	1	4	3.09	1.07
teleworkability	1	2	1.50	0.50
Digitalization index	1	3.66	2.98	0.76

3.4 Findings

3.4.1 Preliminary Analysis: Null Model

The analysis begins with the null model, which includes only the intercept and lacks fixed-level predictors. This model is essential as it aims to estimate the variability of the wellbeing index between groups, specifically countries.

The null model analysis reveals that we have 35,477 observations distributed across 36 countries. The observations are reduced from the original number of 71,758, as responses to all well-being-related questions are not available or valid, making it impossible for some individuals to construct the well-being index. The log-likelihood value is - 42335.993, with an intercept coefficient of 3.477, which is highly significant ($p < 0.0001$). This intercept represents the estimated average value of the wellbeing index for an average country. The variance of the random effects at the country level is estimated at 0.033, indicating the extent to which the wellbeing index varies between countries. Meanwhile, the residual variance is 0.634, representing the variation within countries.

To evaluate the importance of the random effects at the country level, a likelihood ratio test was conducted, comparing the null model with a simple linear model without random effects.

The test result (LR chi2(1) = 1705.24, $p < 0.0001$) indicates that the model with random effects is significantly better than the simple linear model, suggesting that the variability between countries is substantial and cannot be ignored.

Additionally, the Intraclass Correlation Coefficient (ICC) was calculated to measure the proportion of the total variability attributable to differences between groups. An ICC of 5% indicates that 5% of the variability in the wellbeing index is due to differences between countries, while the remaining 95% is due to differences within countries. This finding underscores the importance of accounting for country-level differences in our analysis.

To further compare the models, the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) were calculated. The AIC (84677.99) and BIC (84703.42) values are used to compare different models: models with lower AIC and BIC values are preferred. These criteria help in model selection by penalizing the complexity of the model to avoid overfitting. In this case, the null model serves as a reference point for future comparisons with more complex models.

The null model provides a solid foundation for understanding the data structure and the need to include random effects. The significant variance between countries and the ICC indicate that the differences between countries must be considered in subsequent models. This foundational understanding paves the way for incorporating more variables to explain the variability in the wellbeing index.

Moving forward, the analysis will introduce more complex models, incorporating both fixed and random effects. These models will allow us to better understand the determinants of the wellbeing index by examining how specific predictors influence wellbeing at both the individual and country levels.

3.4.2 Adding level 1 predictors

We extended our analysis by incorporating Level 1 predictors. These predictors include digitalization, age, gender, employment status, number of jobs, and seniority. This expansion allows us to explore how individual-level factors contribute to the variability in the wellbeing index across countries.

Due to missing or null responses in the questionnaire, the number of observations decreases compared to the previous model, resulting in 26,696 observations across the same 36 countries. The log-likelihood value is -30981.614, and the Wald chi-squared statistic is 851.00 ($p < 0.0001$), indicating a good overall fit of the model.

The mixed-effects ML regression model with Level 1 predictors yielded insightful results. We observed significant effects for all the predictor.

The results suggests a significant negative relationship between workplace digitalization and individual well-being. This is evidenced by the coefficient for digitalization, which is -0.089 with a standard error of 0.007 and an associated probability of 0.000. This indicates that as workplace digitalization increases, a significant decrease in individual well-being is observed.

Moreover, the analysis of the level 1 predictors reveals insightful information about the impact of various control variables on individual well-being.

The control variable age exhibits a noteworthy effect on well-being, with a coefficient of 0.005, a standard error of 0.000, and a probability of 0.000. This suggests that age plays a significant role in influencing individual well-being, with older individuals tending to report slightly higher levels of well-being compared to younger.

The coefficient for gender, which stands at -0.185 with a standard error of 0.010 and a probability of 0.000, indicates a significant negative association between gender and well-being. This suggests that females may report lower levels of well-being compared to others.

Similarly, the coefficient for employment status, which is also -0.185 with a standard error of 0.015 and a probability of 0.000, highlights a significant negative relationship between employment status and well-being. This implies that self-employed may experience lower levels of well-being compared to those in other employment categories.

The number of jobs variable exhibits a significant effect on well-being. With a coefficient of -0.094 and a standard error of 0.016, the variable suggests that individuals with multiple jobs are likely to report lower levels of well-being compared to those with a single job.

Seniority, representing the years of work experience, also shows a notable influence on well-being. The coefficient of -0.002 with a standard error of 0.001 and a probability of 0.005 indicates that longer seniority is associated with slightly lower levels of well-being.

These findings underscore the importance of considering various demographic and employment-related factors when assessing individual well-being.

Since the results support hypothesis H1, which suggests that individuals in countries with higher workplace digitalization report lower well-being levels, we cannot reject this hypothesis.

Furthermore, the likelihood ratio test comparing the model with Level 1 predictors to the null model yielded a significant result (LR chi2(1) = 1368.47, p < 0.0001). This finding indicates that the inclusion of Level 1 predictors significantly improves the model fit, underscoring the importance of individual-level factors in explaining the variability in the wellbeing index. The ICC for the country level was found to be 0.0548, indicating that 5.48% of the variability in the wellbeing index is attributable to differences between countries. Additionally, AIC and BIC values were calculated to compare model performance, with lower values indicating better fit. In this case, the model with Level 1 predictors resulted in lower AIC and BIC values compared to the null model, further supporting its superiority in explaining the data.

3.4.3 Adding level 2 predictors

Expanding our analysis, we integrated Level 2 predictors into the mixed-effects regression model. These predictors encompass cultural dimensions at the country level, including power distance, individualism, masculinity[5], uncertainty avoidance, long-term orientation, and indulgence. By incorporating these predictors, we aim to elucidate how cultural factors influence the variability in the wellbeing index.

Due to the unavailability of scores from Kosovo and the indulgence dimension for Cyprus, the number of observations decreases further to 25,858, and the number of countries included in the analysis reduces to 34.

In the mixed-effects model incorporating these additional predictors, the log-likelihood value is -29902.059, and the Wald chi2 statistic is 866.46 (p < 0.0001), indicating strong overall significance.

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[5] Throughout the analysis, this dimension is denoted as "masculinity" for pragmatic purposes; however, it pertains to the dimension of "orientation toward motivation and success" as delineated in the previous chapter.

The coefficients for the predictors highlight that both individual-level and country-level factors significantly affect the wellbeing index, with significant predictors including individualism and indulgence.

The estimated coefficient for "digitalization" is -0.090, confirming the significant negative relationship between digitalization and well-being as highlighted in previous analyses. Masculinity does not seem to have a significant effect on well-being when considered alone.

The coefficient estimate for "indulgence" is -0.005 and statistically significant, indicating a moderate negative relationship with well-being. This suggests that in countries where there is a greater emphasis on indulgence, well-being tends to be lower.

Similarly, individualism shows a positive and statistically significant coefficient estimate of 0.011. This implies that in cultures characterized by a greater emphasis on individualism, well-being tends to be higher.

Concerning long-term orientation, the coefficient estimate is -0.006, statistically significant at conventional level. Nonetheless, the negative sign suggests a potential but weaker negative relationship with well-being.

Assessments of model fit using the residual intraclass correlation (ICC) and information criteria reaffirmed the model's effectiveness. The ICC for the country level was found to be 0.031, suggesting that 3.13% of the variability in the wellbeing index is attributable to differences between countries.

Moreover, the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) values further supported the superiority of the model with both Level 1 and Level 2 predictors. Lower AIC and BIC values compared to previous models underscored the enhanced explanatory power of the expanded model.

Integrating Level 2 predictors significantly enriches our understanding of the factors shaping the wellbeing index across countries, highlighting the relevance of cultural dimensions.

3.4.4 Testing Cross Level Interaction

In the subsequent analysis, cross-level interactions were explored to examine the moderation of various cultural dimensions on the effect of digitalization. This involved conducting separate analyses to investigate, one by one, the moderation of each cultural dimension on digitalization.

The procedure involved fitting mixed-effects regression models, incorporating cross-level interaction terms between digitalization and each cultural dimension. For instance, the moderation effect of power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence on the relationship between digitalization and the wellbeing index was examined. The

interaction terms were included in the model to assess whether the cultural dimensions amplify or attenuate the impact of digitalization on wellbeing.

The results of these analyses, presented in table 6, provide insights into how cultural dimensions may shape the relationship between digitalization and wellbeing. By examining each moderation individually and collectively, a comprehensive understanding of the nuanced interplay between cultural factors and digitalization in influencing wellbeing outcomes was sought.

Table 6: Results of Cross-level interaction analysis

wellbeing index	masculinity		uncertainty avoidance		indulgence		individualism		power distance		long term orientation	
	Coefficient	Std. err.	Coefficient	Std. err.	Coefficient	Std. err.	Coefficient	Std. err.	Coefficient	Std. err.	Coefficient	Std. err.
digitalization	-0.090***	0.009	-0.090***	0.009	-0.091***	0.009	-0.093***	0.008	-0.091***	0.009	-0.092***	0.009
Masculinity	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
uncertainty avoidance	-0.002	0.001	-0.002	0.001	-0.002	0.001	-0.002	0.001	-0.002	0.001	-0.002	0.001
Indulgence	-0.005**	0.002	-0.005**	0.002	-0.005**	0.002	-0.005**	0.002	-0.005**	0.002	-0.005**	0.002
individualism	0.011***	0.002	0.011***	0.002	0.011***	0.002	0.011***	0.002	0.011***	0.002	0.011***	0.002
power distance	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002
long term orientation	-0.006*	0.003	-0.006*	0.003	-0.006*	0.003	-0.006*	0.003	-0.006*	0.003	-0.006*	0.003
moderation masculinity	0.000	0.000										
moderation uncertainty avoidance			0.000	0.000								
moderation indulgence					-0.001	0.000						
moderation individualism							-0.001**	0.000				
moderation power distance									0.000	0.000		
moderation long term orientation											-0.001	0.001

Statistical significance is denoted as follows: *** indicates p ≤ 0.001, ** indicates p ≤ 0.01, * indicates p ≤ 0.05

The first macro-column of the table 6 reports the results of the analysis regarding the moderation of masculinity on the relationship between digitalization and well-being. Recall hypothesis H2, which states, "*The negative relationship between workplace digitalization and well-being strengthens in countries with higher levels of motivation toward achievement and success*."

The coefficient for "moderation masculinity" is 0.000 with a probability greater than 0.5, indicating that the effect of digitalization on well-being is not influenced by masculinity.

These results suggest that masculinity does not influence the relationship between digitalization and well-being, rejecting hypothesis H2.

In the second macro-column, findings concerning the moderation of uncertainty avoidance on the association between digitalization and well-being are presented.

Hypothesis H3 posited that "*The negative relationship between workplace digitalization and well-being strengthens in countries with higher levels of uncertainty avoidance*".

The coefficient for "moderation of uncertainty avoidance" registers at 0.000 with a probability exceeding 0.5. This suggests that the impact of digitalization on well-being remains uninfluenced by uncertainty avoidance.

These results indicate that uncertainty avoidance does not act as a moderator in the relationship between digitalization and well-being. Consequently, hypothesis H3 finds no support in our analysis.

The results of the analysis concerning the moderation of the cultural dimension of indulgence are presented in the third macro-column.

Hypothesis H4 posits that "*The negative relationship between workplace digitalization and well-being weakens in countries with higher levels of indulgence*".

When examining the moderating role of indulgence on this relationship, we find that the coefficient for "moderation of indulgence" is -0.001, with a standard error of 0.000. While this coefficient indicates a weakening effect, it fails to reach statistical significance. Consequently, our findings do not provide support for hypothesis H4, suggesting that the level of indulgence in a country does not attenuate the negative association between digitalization and well-being as proposed.

The analysis of moderation effect concerning the cultural dimension of individualism, is introduced by hypothesis H5, which suggests that "*The negative relationship between workplace digitalization and well-being weakens in countries with higher levels of individualism*".

When examining the moderation effect of individualism on this relationship, we find that the coefficient for "moderation of individualism" is -0.001, significant at the 0.05 level. This suggests a

weakening effect, albeit modest, indicating that in countries characterized by higher levels of individualism, the negative association between digitalization and well-being is slightly attenuated.

These results partially support the hypothesis, suggesting that individualism may indeed play a role in moderating the relationship between digitalization and well-being, albeit to a limited extent. Consequently, hypothesis H5 is not rejected based on these findings.

The analysis of the moderation effect of power distance was introduced by Hypothesis H6: *"The negative relationship between workplace digitalization and well-being strengthens* in countries with higher levels of power distance".

Turning to the moderation effect, the coefficient for "moderation of power distance" is 0.000, with a standard error of 0.000. While this suggests a potential strengthening effect, it fails to reach statistical significance.

Overall, these results do not provide substantial support for Hypothesis H6, implying that the level of power distance in a country may not significantly amplify the negative association between digitalization and well-being as proposed. Hypothesis H6 is consequently rejected.

In the analysis of moderation introduced by Hypothesis H7, which suggests that "*The negative relationship between workplace digitalization and well-being strengthens in countries with higher levels of long-term orientation,*" we observe the following results.

The estimated coefficient for "moderation of long term orientation" is -0.001, with a standard error of 0.001, but the result does not reach statistical significance at conventional level.

Consequently, we must reject Hypothesis H7, which proposed that the negative relationship between workplace digitalization and well-being strengthens in countries with higher levels of long-term orientation.

3.5 Discussion

The identification of a negative relationship between workplace digitalization and the level of individual well-being clearly has implications that demand reflection and critical analysis of the connection between both concepts. Beginning with the technostress creators (Dragano and Lunau 2020) as a framework for discussing the nature of the relationship between digitalization and well-being provides an opportunity to reflect on the challenges posed by the constant use of technologies. First of all, we discuss the issues associated with techno-overload. Techno-overload is a term that captures situations where people face challenges accommodating to the large amount of technological information and communication they are exposed to every day.

Digitalization often leads to information overload, a significant aspect of the negative relationship between digitalization and employee well-being. People are often overwhelmed with messages,

updates, notifications, and tasks that are sent to employees on a regular basis, which may cause one to feel like he or she is always under pressure. This unending flow of information may cause disruption to employees, their concentration, decision-making processes, and even task prioritization. Thereby, it results in cognitive fatigue, lower performance levels, and increased stress levels. Inability to cope with the overwhelming amount of information only triggers stress and additional frustration that, in turn, decreases employees' well-being.

In addition, there is potential harm to the health and well-being of employees as a result of the new digital environment, due to the always-on, always-responsive nature of work.

The scope of the autonomy paradox (Mazmanian, Orlikowski & Yates, 2013) appears to be expanding in the current context. While in the past, emails were enough to blur the boundaries between private life and work, today, nearly all work activities can be performed remotely thanks to advanced digital technologies. On one hand, there is greater freedom in managing one's time and workplace; on the other hand, there is the implicit pressure to be constantly available and to fully utilize this flexibility. In other words, the technology that offers us the freedom to work anywhere and at any time can also perpetuate the social expectation of constant availability.

These aspects can be included within the dimensions of techno-invasion and can be summarized into two main issues: on one side, there is the constant pressure for production and the obligatory necessity to perform at a high level all the time; on the other side, there is the lack of clear division between work and personal life. Consequently, there is a need for workplace technology usage policies, which will help in safeguarding employees' health.

Measures should be taken to enforce a corporate culture that supports the idea of work-life separation and does not require the user to be constantly connected or ready to respond instantly or via certain applications after working hours.

The importance of this discussion should not be underestimated, considering the broader social implications. If workplace digitalization is associated with lower levels of individual well-being, as seen throughout the analysis, it could also contribute to greater social inequality, as workers who are unable to adapt or who experience more stress due to technology might be disadvantaged compared to their more adaptable colleagues. Issues related to techno-complexity can significantly increase for certain categories of individuals.

For that reason, it is possible to confirm that digitalization can have worse implications for the elderly compared to young people. First, it can be assumed that elderly people are less likely to be aware of new digital technologies compared to the younger generation. This may result in a higher perceived difficulty in learning new technologies and mastering tools necessary for technological advancement.

Moreover, workers of the older generation might have higher levels of resistance to change and a higher sense of loyalty to the traditional work paradigm.

Digitalization can indicate that it may be necessary to look for employment elsewhere and that the standard approach to work might not remain the same, which is an essential source of techno-uncertainty. The latter could also be related to the deterioration of the work-life balance, which is likely to affect older people to a greater extent due to the negative effects of digitalization on their well-being.

Lacking this buffer, they might have family obligations that they cannot leave behind, and work might intrude through digital technologies, making it easier to add demands that cause stress and feelings of overload. Similarly, employment status and gender could also play a role in how workers experience digitalization and its impact on well-being. It might be that women or self-employed individuals are more at risk of these negative effects because of gender roles or job insecurity, respectively.

Concerning gender, there are cultural and social differences regarding expectations and job opportunities connected with technology and digital work. For instance, women might be expected to have less competence in technological skills than men, although this is a stereotype. As such, they may be offered little or no support or the necessary resources to enhance their digital literacy levels to fit new technologies in the workplace.

For this reason, they could be more likely to experience feelings of techno-insecurity. As far as employment status is concerned, various categories of work can be affected in different ways owing to digitalization. Self-employed workers may be less likely to report being negatively affected by digitization in terms of their well-being. In many cases, it is much easier for them to manage their work-life balance than for those employed in large organizations.

Employees who work on their own account impose their working hours and methods and might be capable of embracing digitalization more effectively than those who are employed due to pressure from their bosses. On the other hand, employees, who already had it partially worse in terms of the flexibility at work provided by independent professionals, might also have to face the challenge of "technological workplace surveillance," always feeling watched.

The cross-level analysis provided evidence in support of the hypothesis that individualism weakens the negative effect of digitalization on well-being.

In cultures with high individualism scores, individuals might manifest as being more likely to take their own initiative, independently manage their work, including the digital technologies used for their work. In other words, they could be more unthreatened and better able to adapt to digital

technologies and to deal with them without being overwhelmed or feeling that they have lost their autonomy. This means that this more positive attitude may moderate the negative impact of digitalization on the well-being of individuals.

By contrast, in increasingly collectivist societies in which the importance of collective belonging and respect for authorities is greater, digitalization could be seen as a threat to social cohesion or change that demands greater coordination and collective adaptation. That is likely to lead to higher psychosocial stress levels with lower feelings of well-being on the part of those who individually experience digitalization as being more of a challenge.

Individualists are also oriented towards self-improvement and personal development, hence education. In these circumstances, people may have greater levels of personal resources, for instance, training in technology use and support for managing digital transitions, which are able to mitigate the negative impacts on their mental health and well-being. Furthermore, in individualistic cultural contexts, people might have greater decision-making freedom regarding how they use digital technologies in the workplace. This sense of control and autonomy can contribute to a more positive perception of digitalization and reduce its negative impact on well-being.

Regarding other cultural dimensions, which were expected to have a significant impact on the digitalization-well-being relationship, the analysis results do not show relevant connections.

This suggests that cultural dimensions might not have a direct and evident influence on the relationship between workplace digitalization and well-being.

The concept of power distance, for instance, influences the hierarchy and distribution of power within societies, but it may not directly impact how individuals perceive digitalization. This is because in environments with power distance or centralized power structures people might still embrace digitalization based on their resources and capabilities.

Likewise uncertainty avoidance, which relates to a societies willingness to accept uncertainty and change might not necessarily correlate with attitudes towards digitalization. In cultures with high uncertainty avoidance individuals can adapt to digitalization through training and support.

Furthermore, the connection between digitalization and well-being can be influenced by factors like access to resources, working conditions and company policies that are not directly tied to Hofstede's cultural dimensions.

As a result, these additional cultural aspects do not play a role in influencing how workplace digitalization impacts well-being.

3.6 Pratical implications

In this section, the practical implications derived from the findings and analyses presented in the previous chapters will be discussed. The aim is to provide concrete recommendations and actionable strategies for organizations to mitigate the negative effects of digitalization on employee well-being. In this section, the practical implications derived from the findings and analyses presented in the previous chapters will be discussed. The aim is to provide concrete recommendations and actionable strategies for organizations to mitigate the negative effects of digitalization on employee well-being. The proposed policies and practices will be geared towards promoting wellbeing, taking into account the individual and cultural needs of the workers.

To overcome information overload, measures need to be taken to manage information effectively, which may include the setting of guidelines on how information is communicated, identifying which information is necessary and should be prioritized, and taking periodic 'time-outs' from information technology for employees to regain control over their tasks.

Moreover, measures can be implemented to bridge the gap between different groups and prevent the relationship with digitalization from becoming an additional discriminatory divide.

These measures should comprehend providing particular training sessions elderly and workers with a lower level of digital literacy, programs aimed at equipping them with the skills that enables them to use digital technologies at the workplace.

Introducing gender awareness and speaking up for gender issues in the technology field is crucial for implementing gender equality and eradicating all forms of discrimination at the workplace. Companies and organizations can fund projects and projects that advocate gender equality and combating gender stereotyping in technology, increasing information about gender equality.

Shifting to the issue of technological workplace surveillance, it is essential to enforce policies that strike a balance between monitoring and respecting that the personal life and actions of an employee are their own business. Be transparent about the objectives, scope, and practices of workplace monitoring; make employees part of the decision-making process when it comes to tech surveillance, to ensure transparency and confidence.

It is also worth remembering that human-machine interaction and digital reliability are very broad issues that concern all people, which is why the general aspects should be regulated at company level. One solution might be to make technological interfaces more intuitive and user-friendly, thus reducing the discrepancy between using machines and being human; to create backup plans to immediately address issues when technology misbehaves and offer human assistance in the event that employees struggle with the technologies, ensuring timely and competent help. Additionally, ensure

that the maintenance and updating of technological systems are carried out regularly to minimize downtime and guarantee the reliability of digital tools.

Finally, given the considerations about collectivist societies and their potentially greater negative impact of digitalization on well-being, a solution could be to focus on promoting collaboration and solidarity within the workplace.

Organizations can implement training and support programs that involve groups of employees, encouraging collaboration and the exchange of knowledge and skills. These programs can provide an environment where employees support each other in learning new technologies and adapting to digital changes.

Developing working groups or cross-functional teams within the organization also encourages employees with different abilities and perspectives to collaborate and come together. Combining these teams is how we can collectively tackle digitalization issues, benefit from resource & expertise sharing, and create an atmosphere of togetherness and community help.

Leadership policies that seek the participation and involvement of employees have the benefit of reducing stress from digitalization and anxiety in the digital workplace. Employee involvement during the implementation of new technologies can create a feeling of control, and engagement will therefore decrease the detrimental effect on well-being perceptions of the employees.

Conclusions

This study provides a direct insight into the impact of workplace digitalization on employee well-being with results demonstrating negative effects. Although the level of well-being of individuals in the face of digitalization can be moderated by demographic, socio-economic and occasionally cultural differences, we can say that resources and capabilities shape individual coping with and adaptation to digitalization challenges.

In addition, organizational policies and initiatives to promote training, collaboration and mutual support can help mitigate the negative effects of digitization on employee well-being, regardless of cultural context. The use of culturally tailored policies could be a possible extra step once studies define a much broader and more widespread cultural moderation.

Limitations and future research

We want to highlight that this research has some limitations that deserve to be noted. First, the analysis was limited to the cultural dimensions established by Hofstede and did not regard the possibility of other dimensions of culture impacting the relationship between workplace digitalization and well-being. Additionally, the empirical analyses additionally might have been constrained by the accessibility of information, in view that secondary data have been used.

It would be insightful to examine in more depth in future research how other cultural factors, including national values, social norms, and organizational practices, may contribute to the perception of well-being in digitalized work contexts. Longitudinal analysis could further provide the possibility to investigate how the interactions of digitalization with well-being are sustained over time and allow for consideration of cultural and technical changes.

Lastly, it would be beneficial to investigate the role that workplace well-being programs and corporate policies play in reducing the detrimental effects that digitalization has on workers' mental health and general wellbeing.

NOTE

Digital tools were used in the writing of this paper to improve the outcome and make the process more efficient.

We report the use of Stata18 Software for statistical analysis and the use of ChatGPT for proofreading.

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