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# Remote workers' well-being: Are innovative organizations really concerned? A bibliometrics analysis

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ABSTRACT

The coronavirus disease 2019 pandemic has accelerated the adoption of remote and hybrid forms of work in organizations. Despite the benefits that these flexible working models can bring to both employees and organizations, they are accompanied by a darker side. Heavy digital presence, increased workload, and blurred boundaries between work and life are some of the hindrances derived from remote working that directly affect employee well-being. Aware of the negative consequences that can lead to individual and organizational performance, companies are expected to define and adapt policies and regulations to protect employees and promote their well-being. However, literature addressing these research topics is scarce, and many contributions are dispersed across different fields. Therefore, we address this research gap by performing a bibliometric analysis of the contributions to remote employee well-being and complementing it with a content analysis. A sample of 64 publications was collected from two different databases. This study provides a performance measurement analysis of publications and citations and a scientific mapping of collaboration networks and emerging thematic trends. Furthermore, the content analysis allows us to understand how the organizational perspective on the well-being of employees in remote working settings has been addressed in the literature, clearly identifying opportunities for future research. Finally, the major challenges and research agendas are discussed.



## Introduction

The coronavirus disease 2019 (COVID-19) pandemic has profoundly impacted various aspects of society, with the consensus pointing to the workplace as one of the most affected domains (Blaszczyk et al., 2022). Owing to the measures imposed to contain the spread of the virus, several organizations and employees were compelled to expedite their digital transition processes to ensure operational continuity during this period (Birdie & Joshi, 2023). This changed the traditional modus operandi in terms of location and working conditions, how work had to be done using digital platforms, communication, and necessary technological investments (Li et al., 2023). The working paradigm began to incorporate the "when?" and "where?" to work (Seeber & Erhardt, 2023).

With the end of COVID-19 restrictions and the return to the pre-COVID normality, many organizations have chosen to maintain more flexible work arrangements supported by digital means. Such arrangements envisage responding to the needs of workers as well as supporting recruitment and controlling costs (Ferreira et al., 2021). Thus, working models that were known but uncommon until COVID-19, such as remote or hybrid work, have become popular and are expected to stay and evolve (Sahut & Lissillour, 2023).

Flexible working models bring some benefits to employees, particularly in terms of autonomy and the ability to manage their schedules, which facilitates work–life balance (Rathnaweera & Jayathilaka, 2021) and well-being (Ferreira et al., 2021). However, the intense use of digital media, difficulty in separating work and non-working time, and physical distancing from colleagues and supervisors are potential negative consequences that affect workers' well-being (Khan & Nasim, 2024).

Such side effects of non-traditional work arrangements may directly impact the physical and mental health of employees, consequently affecting their ability to work and productivity levels, which, in turn, impacts the organization (Chatterjee et al., 2022; Ferreira et al., 2021). Recent studies show that the well-being of workers significantly affects organizations (Umasankar et al., 2022), underscoring the need to prioritize a policy focused on the well-being of their human capital (Petru et al., 2023).

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However, literature on the well-being of remote workers and how firms address the challenges of these new working models is scarce. The few existing contributions explore human resource management (HRM) (Bamel et al., 2022) and leadership practices that are most appropriate to this new work context (Tigre et al., 2023). In another emerging line of research, Clausen et al. (2023) and Mueller (2022) address the need for organizations to incorporate measures focused on digitally remote workers into their internal corporate social responsibility (CSR) policies.

Related systematic literature reviews and bibliometric analyses have been published to understand the depth and extent of the contributions to the body of knowledge. For instance, Khan and Nasim (2024) recently analyzed knowledge workers' well-being, although they did not focus on remote work contexts. Charalampous et al. (2019) aggregated publications on the well-being of remote workers, albeit in a pre-pandemic context, and disregarded the organizational level. Additionally, Marsh et al. (2022) conducted an integrative review of the negative consequences of digital media use on workers.

However, none of these systematic literature reviews or similar works are specifically about remote workers and their specific challenges, including well-being. Moreover, to the best of our knowledge, no other study has attempted to specifically address the well-being of remote workers to understand the efforts performed from an organizational perspective.

This study aimed to fill this gap in the literature by examining the relevant contributions in the field from a bibliometric perspective and complementing it with a content analysis of all gathered articles. Bibliometric analysis focuses on performance analysis of metadata and scientific mapping that establishes existing thematic and collaboration networks (Donthu et al., 2021).

This study is vital for understanding the intellectual and scientific structure of the field of research as well as uncovering new research opportunities. Furthermore, for organizations, it represents a starting point for raising awareness of the challenges inherent to these new working models. It also serves as a guide for adapting or creating new practices and internal policies to protect employee health.

From this analysis, we can conclude that this is a new research field with few established research networks. Surprisingly, there has been very little work from an organizational perspective despite the well-established relevance of sound HR policies in improving the well-being of workers and their positive impact on organizational performance. These results will enable us to identify future research avenues that provide opportunities for further investigation.

The following section presents a literature review of the topics most relevant to this study. Section 3 outlines the methodological choices and research steps. Sections 4 and 5 present the analysis results. Section 6 discusses the results and future research trends. Finally, Section 7 presents the conclusions and limitations of this study.

## Literature Review

### *Remote Work*

Remote work has become a reality since advances in information and communication technologies (ICT) have allowed workers to distance themselves from the company's premises while using technology to connect and communicate with colleagues and managers (Gajendran & Harrison, 2007). Digital transformation processes, along with globalization, have helped expand the emergence of distributed virtual teams, where individuals have to work collaboratively despite being geographically dispersed (McPhail et al., 2024). This allowed the expansion of alternative recruitment strategies and overcame cost and physical space constraints for large companies (Thompson, 2018; Ferreira et al., 2021; Vial, 2019).

The rapid growth of this academic field has led to the proliferation of different definitions, conceptualizations, and terms for distributed work (e.g., telework, remote work, work from home, virtual work, hybrid work, and e-work) (Schafer et al., 2023). This has resulted in the fragmentation of the concept that promotes the dispersion of research into subdomains (Lamovšek & Černe, 2023). Although these terms had significant similarities, they differed only slightly. Initially, the term was anticipated to be telecommuting (Nilles, 1975) to represent the use of ICT to relieve work commuting. The term has evolved to telework and, more recently, e-work to resume work that can be performed outside the workplace, with no or minimum face-to-face interaction with colleagues and supervisors, through digital means (Kirk & Belovics, 2006; Charalampous et al., 2019). Furthermore, while teleworking establishes the use of ICT, but work can be done anywhere, remote work restricts work anywhere outside the organization's facilities, and work from home limits this work to the worker's primary residence (Lamovšek & Černe, 2023; McPhail et al., 2024).

In this study, we adopt the term remote work as an umbrella term to represent the common premise of individuals who work at least part of their time in a location different from the organization's headquarters (Cuel et al., 2020; Orlandi et al., 2024) and who depend on technological and digital means of communicating, planning, and coordinating their tasks and interactions with other members of the organization (Kirkman & Mathieu, 2005; Lamovšek & Černe, 2023).

The advent of the COVID-19 pandemic and the measures imposed to mitigate the spread of the virus caused distant work models to grow abruptly (Sikhondze et al., 2024). European reports show an increase in teleworking from 5% in 2019 to 12% in 2020 (Eurofound, 2022), whereas in the United States (US), teleworking has increased from 5.7% to 17.9% (Bureau, 2022; Sikhondze et al., 2024). Nonetheless, during the lockdown, knowledge workers were forced to work from home, and several other activities were limited, making this an unprecedented situation (Khan & Nasim, 2024; Sahut & Lissillour, 2023). Frequently, this meant that workers had to coexist in the same physical space as other elements of the household, balancing work, family, education, homemakers, and leisure activities.

With the lift in COVID-19 restrictions, most workers have returned to their physical workplaces. However, Eurofound (2022) reported that not all workers who returned to their workplace did so voluntarily. More than 60% said that they preferred more flexible work arrangements and working from home for at least part of the week, with a higher incidence among women. Many companies have opted for hybrid working models to maintain some of the benefits of remote working while maintaining a more physical connection to the workplace (Mohammed et al., 2022). The increasing percentage of workers working in hybrid regimes reinforces the idea that remote working is here to stay and that it has permanently changed the future of work (Sahut & Lissillour, 2023).

The literature advocates several advantages and benefits achieved by these working models in terms of personal (e.g., flexibility, work–life balance, well-being, and job satisfaction), organizational (e.g., reducing costs and productivity), and planet (e.g., reducing emissions, fuel, and energy consumption) (Bouncken et al., 2022; Ferreira et al., 2021; Lewis & Cooper, 2005; McPhail et al., 2024). However, contradictory evidence also suggests that there are associated risks, namely considering employees' mental health and stress (Sandoval-Reyes et al., 2021), performance, workload, and work–family balance (Ferreira et al., 2021), which must be weighed by both individuals and organizations when adopting these flexible work arrangements (Muhammed & Sivasubramanian, 2022; Sahut & Lissillour, 2023).

### *Remote Work Outcomes for Employees*

Remote work has been extensively studied in recent years, mainly due to the digital shift caused by the COVID-19 pandemic (e.g., Khan

**Table 1**
Negative Outcomes of Remote Work on Well-Being.

| Well-being Dimension (Van Horn et al., 2004) | Negative outcomes of remote working |
|---|---|
| Psychosomatic | Includes the effects of prolonged use of necessary or common digital devices when working remotely, such as smartphones or computers, which tend to cause eye strain and lead to blurred vision and head and neck pain, may also cause poor posture, and can reduce sleep quality (Wynn & Jones, 2023), as well as other health complains (Seeman et al., 2023). |
| Social | Social isolation and the lack of interactions with colleagues, particularly face-to-face interactions and other social relationship resources (Muhammed & Sivasubramanian, 2022). Previous studies also identify trust issues in supervisors as impacting long-term employers' well-being (Iqbal et al., 2021). Besides, blurred boundaries between work and personal life affect individuals' well-being (Muhammed & Sivasubramanian, 2022). |
| Cognitive | The "always-on culture" often prevents employees from switching off from work, which results in poor well-being of employees (Charalampous et al., 2019). Additionally, mental fatigue from extensive synchronous media usage impacts employee well-being (Sikhondze et al., 2024). |
| Professional | Includes autonomy and competence. Frequently, remote workers feel the need to be always available to meet job expectations and to accomplish subjective norms of "always" connected. This "always-on culture" results in long working hours and the difficulty to switch off from work, which in turn translates into an increase in techno-overload (Charalampous et al., 2019). |
| Affective | Includes negative emotions, emotional exhaustion, and loss of job satisfaction and organizational commitment. The impact of the psychological and mental components includes stress, anxiety, depression, addiction, and burnout. In fact, Ferreira et al. (2021) showed that participants described technology dependency problems as one of the top 5 disadvantages of remote work. |

& Nasim, 2024). However, it is still an open topic of research that presents contradictory evidence regarding its effects on individuals, both in terms of the impact on their physical and mental health and in terms of job satisfaction and performance (Charalampous et al., 2019; Chatterjee et al., 2022).

Frequently, remote work is recognized to benefit workers by enabling more autonomy and flexibility at work and by improving work–life balance (Lewis & Cooper, 2005). In addition, the reduction in home-to-work commuting (e.g., transportation) is considered cost- and time-saving, allowing for improved productivity and reduced work–family conflicts (Molino et al., 2020). Ferreira et al. (2021) compare the top five advantages of remote work reported in the literature with those identified by e-workers in interviews. Although not exactly in the same order, most points converge, including reduced overall costs, work–life balance, enhanced worker autonomy, and increased productivity and morale. Additionally, the literature focuses on job satisfaction and reduced burnout, whereas interviewers describe leveraging remote expertise and establishing a competitive advantage.

All these benefits have been associated with high levels of individual well-being (e.g., Muhammed & Sivasubramanian, 2022). Well-being, such as happiness and life satisfaction (Khan & Nasim, 2024), is a multidimensional concept that can be perceived within affective, cognitive, social, professional, and psychosomatic dimensions (Van Horn et al., 2004).

Despite the positive results of remote work, several studies indicate that this working model has the potential to bring about adverse effects for both companies and workers (Muhammed & Sivasubramanian, 2022). As remote workers rely heavily on ICTs, they are more exposed to problems associated with the prolonged use of such devices. Technostress is a frequently reported outcome representing the stress imposed by ICT use (Thurik, 2024). Studies have shown that the greater the dependency on ICT, the greater the likelihood of a negative impact on employee well-being and performance (Tarafdar et al., 2020).

Remote workers frequently report workload and technostress (Khan & Nasim, 2024), especially during the COVID-19 where high demands for performance, emotional resilience, and uncertainty have contributed to such an increase (Rodríguez-López et al., 2021; Sahut & Lissillour, 2023). Stress, workload, and the blurred boundaries between personal life and work have been identified as the main drivers of satisfaction, happiness, and well-being reduction in remote workers (Charalampous et al., 2019). Often, these workers report feelings of loneliness and isolation related to a lack of physical interaction (Ferreira et al., 2021) and a lack of communication efficacy and social support from colleagues and supervisors, which are recognized to influence employee engagement (Muhammed & Sivasubramanian, 2022). In a certain way, workers may feel invisible in the face of their work efforts due to communication problems or the nature of work that is not clearly "seen." This frequently results in extra effort to become visible, increasing work pressure levels, and working beyond normal working hours (Muhammed & Sivasubramanian, 2022; Seeman et al., 2023). Consequently, this leads to potential family conflicts, increased workload, and perceived stress. Additionally, psychological strain in the form of fatigue can be observed, especially when work activities require extensive synchronous media, which reduces employee productivity (Sikhondze et al., 2024). This is recognized as reducing workers' well-being, which is reflected in several areas of an individual's life, both on a personal level and in terms of organizational performance (Kalimo et al. 2003; Khan & Nasim 2024; Thurik et al. 2024).

To combine the problems and challenges inherent in the use of digital media, Vanden Abeele (2021) proposed the term digital well-being to represent the balance between the positive and negative outcomes of ICT usage. However, evidence of the impact of remote work on employee health, including digital well-being, is becoming a reality now (Lunde et al., 2022; Seeman et al., 2023).

Based on the evidence reported in the literature, Table 1 summarizes the negative outcomes using the dimensions of well-being proposed by Van Horn et al. (2004).

Despite the challenges that remote work entails, under the right circumstances, this working model can bring about more positive outcomes than negative ones (Ferreira et al., 2021). For instance, appropriate social and organizational support can overcome many of its disadvantages (Muhammed & Sivasubramanian, 2022). The flexibility offered by technology can bring favorable benefits both in terms of time management and mobility, as well as a balance between work and family, which in turn may increase satisfaction with life in general and with their job in particular (Ferreira et al., 2021). To achieve these benefits, organizations must address appropriate strategies and recommendations to promote well-being at work and protect their human assets (Clausen et al., 2023). Organizations must evaluate and raise awareness of the problematic associations of remote work to put together the necessary procedures that allow them to derive the expected benefits from these flexible working models.

*Remote Work Outcomes for Organizations*

Previous research has emphasized that individuals are primarily responsible for ensuring their well-being (Gabriel et al., 2022). However, extending this responsibility to the corporate level is not only a moral obligation but also a strategic investment (Elufioye et al., 2024; Khan et al., 2023). Considering the significant changes in the nature of work since the COVID-19 pandemic, it is crucial to prioritize and promote a holistic approach to employee well-being to attract, retain, and nurture talent in an increasingly competitive global market (Elufioye et al., 2024).

Apart from the effects of remote work on employees, it is natural that the adoption of these flexible working models will also have an impact on organizations, both in terms of performance (Chatterjee et al., 2022; Contreras et al., 2020; Tarafdar et al., 2020), and at the management level (Contreras et al., 2020). A healthy workforce has the potential to positively influence organizational performance, engagement, and innovation (Bartmann et al., 2023; Khan et al., 2023). Consequently, organizations are increasingly recognizing the necessity of enhancing human resource (HR) practices and internal policies to support employee well-being and mental health (Elufioye et al., 2024).

Flexible working models have already been applied by organizations in some sectors, namely knowledge workers (Bélanger & Allport, 2008; Bentley & Yoong, 2000; Bentley et al., 2016), but it was during the COVID-19 outbreak that they acquired greater expression and importance (Metwally et al., 2021). In addition, remote work allowed organizations to continue their activities during periods of mandatory lockdown, a test of their capability to adapt and resist crisis situations, accelerating the ongoing digitalization processes.

During this period, the body of knowledge increased exponentially, namely, to understand the impact of these new challenges on organizations (Battisti et al., 2022; Blaszczyk et al., 2022; Chatterjee et al., 2022; Contreras et al., 2020; Juchnowicz & Kinowska, 2021). Evidence suggests that the impact can be observed in terms of productivity, capacity, and recruitment reach (talent war) as well as in cost reduction (electricity, physical facilities, and gas emissions), leading to stronger performance (Chatterjee et al., 2022).

However, fewer positive effects were observed. Increased exposure to digital media can have unintended consequences for remote workers as the boundary between work and personal life eventually blurs. Consequently, the sense of working at high intensity and having a heavy workload tends to increase among teleworkers (Eurofound, 2023a; Felstead & Henseke, 2017). Sokilic (2022) reported that the Australian Government, in a 2020 study, identified several undesired effects of remote work: higher coordination costs, fewer social interactions and knowledge sharing, and lower levels of collaboration between workers.

Prior research has documented the initiatives and policies implemented by organizations for onsite employees (e.g., Venema et al., 2018). However, the rapid transition to remote work has rendered some of these practices unfeasible in the new environments.

In the post-pandemic context, the literature suggests that these models are here to stay, with many workers considering teleworking to be a perk (Eurofound, 2022, 2023b). However, it is not yet clear how companies will adapt to this new reality and address the new challenges and trends arising from remote work. For instance, it is necessary to understand how companies will incorporate new strategies to promote employees' well-being in the face of these working models, as well as adapt the policies they had for workers in traditional settings (Kraus et al., 2023).

Some companies have implemented practices to promote the well-being of remote workers; however, these efforts mainly represent dispersed initiatives without a common framework (e.g., Bamel et al., 2022). The strategies found in the literature include recommendations for contemporary HR practices aimed at destigmatizing mental health and fostering a culture of overall well-being. These strategies include providing robust Employee Assistance Programs (EAP), offering preventive self-care and healthy behavior programs, optimizing virtual teams, enabling leadership training on mental health awareness and supportive techniques, promoting safety and ergonomic practices, and providing opportunities for mental recharge (e.g., Gabriel et al., 2022; Khan et al., 2023; Wu et al., 2021). However, remote and flexible work settings are often considered practices that enhance well-being (Elufioye et al., 2024; Gabriel et al., 2022), which diverges from our approach.

In a different line of investigation, Bartmann et al. (2023) enumerated a set of organizational practices aimed at promoting the general health of workers, emphasizing the need to update these tools in the context of remote work. Representing an exception to the existing body of knowledge, these authors propose a set of practices adapted from those implemented in office settings to maintain an organizational focus on promoting employee health. Examples include mindfulness programs delivered virtually to employees working from home (Bartmann et al., 2023) and encouraging employees to take time off for adequate work recovery (Gabriel et al., 2022). Despite the innovative and practical approach of such articles, they remain theoretical in nature, and none of the discussed practices have been supported by empirical evidence thus far.

Previous reviews have reported a lack of corporate strategies to deal with remote working, as well as the absence of specific HR policies (Agrawal et al., 2023; Donnelly & Jonhs, 2021). Consequently, rethinking and adapting these strategies has become a major challenge for organizations (Bartmann et al., 2023; Orlandi et al., 2024).

Recent studies, particularly literature reviews, have focused on two main aspects: remote work issues and employee well-being. However, few studies have integrated both topics. Olawale et al. (2024) reviewed remote work practices among IT professionals but did not focus on promoting employee well-being. Their review focused on technological advancements, organizational culture shifts, and societal expectations to identify the necessary adaptations for sustainable, long-term remote work. Although their proposed policies include work–life balance considerations for individuals and organizations, the primary focus has not been on organizational strategies for promoting employee well-being.

Elufioye et al. (2024) explored the multifaceted dimensions of employee well-being and initiatives aimed at promoting mental health in HR practices. However, in their review, flexible work arrangements, such as remote working settings, were considered HR practices that promote well-being tailored to each employee's preferences. This perspective differs from the premise of the present study.

Other contributions come from theoretical studies, supporting the need for further research in this field. Wu et al. (2021) advocated the need to reward companies that implement practices that promote the mental health of their employees. This strategy encourages employers to share and follow best practices to develop organizational cultures that support and promote positive well-being. However, mental health is often considered a factor in employee well-being (Juchnowicz & Kinowska, 2021). Thus, this study may not have covered the multidimensional nature of well-being or related it to the remote work context. In addition, Khan et al. (2023) acknowledged the need to implement corporate well-being programs that are detrimental to contemporary HR practices to promote a person-centric culture in organizations that could support employee health.

Empirical evidence regarding the influence of organizational-level and HRM policies on the well-being of employees working outside of companies' premises is still scarce and scattered. However, initiatives that promote remote worker well-being and the adoption of innovative behavior can and should be framed by a firm's corporate CSR policy (e.g., Carroll, 1991; Garriga & Melé, 2004; Gillan et al., 2021; Kim et al., 2018; Park & Jang, 2021; Torres et al., 2023; Wolf et al., 2024). For instance, under the conservation of resources (COR) theory, Bolt

and Homer (2024) explored the relationship between CSR and collaborative practices that aim to improve workers' well-being and concluded that these might not have direct effects but are mediated by the work–family–work relationship and HRM practices. These relationships are naturally altered in remote work contexts, reinforcing the need to explore them. Prior studies have also examined the impact of CSR on workers' quality of life (e.g., Kim et al., 2018; Elorza et al., 2022), although not always directly referring to workers' well-being and never focusing on the remote context. Nevertheless, employees with a stronger perception of CSR policies tend to adopt more innovative behaviors and experience higher levels of well-being (Celma et al., 2018; Viet, 2023).

Carroll's (1991) seminal paper conceptualizes social responsibility as a pyramid broken down into four types of responsibility: economic (profitable), legal (obeying laws), ethical (obligation to do what is just and right), and philanthropic (contributing to the well-being of the community). The "ethical" category includes activities and practices that, although not legally framed, are expected from the companies. They are standards, norms, or expectations that reflect what stakeholders (customers, employees, shareholders, and the rest of society) consider fair and equitable.

More recently, the literature experienced the dawn of the concept of "corporate digital responsibility" (CDR) as a subset of the social responsibilities of a firm focused on digital transformation processes. CDR frames the new responsibilities of organizations regarding the impact, risks, challenges, and opportunities arising from the adoption of new technologies (Herden et al., 2021).

Despite these important contributions, a gap remains in the literature, as previously identified by Kanapathipillai et al. (2023). This study aims to address this gap by examining the influence of corporate policies, practices, and support systems on fostering employee well-being in remote work settings.

### *Theoretical Perspectives*

Although several theories have been used to study these topics in different situations, it remains unclear whether they are applicable to remote working settings. Consequently, several authors advanced suggestions for future research. For instance, to address uncertainty, Agrawal et al. (2023) recommend investigating remote work under the institutional logic theory to understand organizational responses to the diverse nature of work provided by flexible arrangements. Additionally, theories such as high commitment theory and situational theory can be employed to explore work–life balance, gender bias, stress and well-being management, and other management control topics.

Self-determination theory emphasizes the importance of satisfying basic psychological needs such as autonomy, competence, and relatedness for employee motivation and well-being in new work settings (Deci & Ryan, 2013; Gagné & Deci, 2005). In the context of remote work, ensuring that employees feel autonomous, competent, and connected to their colleagues is crucial for their well-being as well as for mitigating the negative effects on need satisfaction, such as home-life conflict, technology hassles, and social and professional isolation (Gagné et al., 2022).

Labor process theory has been suggested to study how managers seek to control the organization of work (Donnelly & Johns, 2021), whereas social exchange theory can be applied to understand how companies providing support and opportunities to remote workers can lead to reciprocal benefits, such as increased loyalty and productivity.

Dynamic capabilities and organizational adaptation theories have advanced to study the shift toward more flexible work arrangements, particularly focusing on technological adaptation and adoption, employee training and engagement, and organizational innovation and creation (Agrawal et al., 2023). When studying barriers to employee well-being, Kreiner et al. (2009) employed organizational boundary theory to examine work–life balance.

According to the COR theory (Hobfoll et al., 2018), employees should utilize their resources (characteristics, conditions, and energy) to cope with job demands. When job demands are imbalanced with available resources, or when organizational investments do not fulfill expectations in providing and protecting adequate employee resources, stress can occur, making employees more vulnerable to a reduction in their well-being (Hobfoll, 2002). In the context of remote work, job demands and resources have changed; therefore, it is essential to explore existing theories within this new context (Adisa et al., 2023; Kaltiainen & Hakanen, 2024).

Bakker and Demerouti (2018) argued that according to the job demands-resources (JD-R) theory, job demands and resources are crucial for employee well-being at the individual, team, and organizational levels. In this new context, employees deal with high and interconnected demands from different life domains and require major resources to manage these demands and mitigate their impacts. Therefore, an extended JD-R theory was proposed (Demerouti & Bakker, 2023), which should be considered in future studies. In line with this inquiry, several researchers have suggested the development or adaptation of particular theories and frameworks to address the specificities of remote working and HRM (Donnelly & Johns, 2021).

## Method

To guide the research process, three main research questions (RQs) were formulated:

RQ1. What has been the publication's performance on employee well-being in remote working settings?

RQ2. What is the intellectual structure of the literature on remote employee well-being?

RQ3. To what extent have organizational issues been addressed in the current literature on remote employee well-being?

We selected the bibliometric analysis methodology to address our RQs. Bibliometric analysis is a methodology used to summarize and map scientific production in a specific field by investigating the intellectual, social, and conceptual relationships within a particular topic (Öztürk, 2024), unfolding emerging trends and knowledge gaps to foster the development of new theories (Bednárová & Serpeninova, 2023; Donthu et al., 2021; Lee & Bozeman, 2005; Öztürk, 2024; Snyder, 2019; Vallaster et al., 2019). This method introduces objectivity into the evaluation of scientific work, enhances rigor, reduces researcher bias (Zupic & Cater, 2015), and yields objective and rigorous results (Mukherjee et al., 2022). When executed with precision, it is extremely valuable to establish a strong foundation for the development of theory and knowledge across various fields (Öztürk, 2024). Additionally, this methodology has been widely used in business research, especially in recent years, owing to the development of software that supports this kind of analysis and the enhancement of scientific databases, such as Scopus and Web of Science (WoS) (Donthu et al., 2021; Guerola-Navarro et al., 2023; Zupic et al., 2015).

A bibliometric analysis involves a structured sequence of phases. The process begins with the Study Design phase, in which RQs are formulated and appropriate bibliometric methods are identified to address them. This was followed by the Data Collection phase, which included data selection, gathering, and preparation. Subsequently, a Data Analysis was performed using bibliometric software. The study concludes with Data Visualization and Interpretation (Aria & Cuccurullo, 2017; Donthu et al., 2021; Zupic et al., 2015). Our study adhered to these best practices, following the four-stage guidelines for bibliometric analysis in business research proposed by Donthu et al. (2021).

First, three RQs were formulated to address concerns about remote workers' well-being and better understand how research on this emerging topic has evolved. Following the next step guidelines,

we used two kinds of techniques in our bibliometric analysis to address our RQs: 1) performance analysis, which accounts for publications and citation-related metrics (e.g., total number of publications and total citations), and 2) science mapping, which establishes the networks (e.g., citations and co-citations analysis, co-word analysis, co-authorship analysis) within the research topic.

When performing the data collection step, a pre-query was performed to find literature addressing CSR or CDR initiatives on remote workers' well-being; however, virtually no useful results were obtained. Therefore, we proceeded with this research by broadening the scope and looking for literature that addresses the well-being of remote employees.

Data were gathered and merged from two databases, Scopus and WoS, to enrich and deepen this study's results (Caputo & Kargina, 2022; Echchakoui, 2020; Ertz & Leblanc-Proulx, 2018). The chosen databases are well known in the field of Social Sciences because they include the most relevant and high-quality studies in this field and are frequently used in bibliometric research (e.g., Ali et al., 2023; Atanasov et al., 2023; Tigre et al., 2023). According to Echchakoui (2020), utilizing both databases enables a more comprehensive analysis. This conclusion is based on the observed discrepancies in the results when using a single database (either WoS or Scopus) compared to combining records from both databases.

The next step involved merging the results obtained from the two databases. To ensure the accuracy of the results and uniformity of the fields, R-Studio software was used, and the sequence of commands indicated in CRAN.R (2023) was followed. However, due to formatting differences in the "Cited References" field across both databases, some additional standardization was required, which was addressed using MS Excel.

After analyzing the publications gathered, we proceeded with a content analysis of each article in the sample to assess whether they focus on employee concerns or organizational perspectives. These combined techniques are commonly used in bibliometric studies (Guaita-Martinez et al., 2022; Tigre et al., 2023; Xu et al., 2018).

To perform the data processing and the proposed analyses, R packages Bibliometrix and Biblioshiny were used (Aria & Cuccurullo, 2017). Biblioshiny is a graphical user interface that facilitates the analysis and visualization of outputs. Although several other software packages for bibliometric analyses are currently available, such as the well-known VOSviewer (Van Eck & Waltman, 2010), Bibliometrix R was found to be the best suited when different databases are used combined (e.g., Donthu et al., 2021; Rabbani, 2021). Similar to VOSviewer software, Bibliometrix R can be used for visualization purposes, namely, to generate word and network maps (Van Eck & Waltman, 2010).

Data collection and preparation for analysis followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol (Page et al. 2021). To start, a search was performed in both databases, using keywords with quotation marks ("digital well*", "employee well*", "remote work*", "hybrid work*", "virtual work*") and boolean operators AND and OR (e.g., "digital well*" OR "employee well*"). Only specific fields were considered, namely title, abstract, and author keywords. The queries yielded 89 articles from WoS and 110 from Scopus.

Following the PRISMA workflow, additional criteria were selected to limit the sample. Subject areas limited articles to Business, Management, and Accounting; Social Sciences, Computer Science, Informatics; Economics; and Psychology. Additionally, only completed articles from scientific journals, conference papers, peer-reviewed articles, and articles written in English were considered. No year limit was selected. After applying these filters, 48 and 49 publications were removed from WoS and Scopus, respectively, resulting in a sample of 102 documents. Next, duplicate records were eliminated during the merging of the database results using automation tools, which removed 20 articles, resulting in 82 records being accessed for eligibility. To complete the data-cleaning process, all titles and abstracts of the samples were reviewed by the authors. Consequently, 18 studies were excluded from the analysis. Six systematic literature reviews and/or bibliometric analyses were excluded to eliminate bias in the citing references. In addition, 12 studies fell outside the research scope (education, robots, artificial intelligence, consumers, mineworkers, and patients with mental health conditions). The final sample comprised 64 articles (Figure 1).

## Bibliometric Analysis

### *Performance Analysis*

The publication and citation trends are presented in Table 2. Regarding publication, 64 documents have been published to date, although 2024 is just starting on the date of analysis, with an annual growth rate of 10,91%. However, during data collection, it was observed that the publication timeline ranges from 2018 to 2024, despite not imposing any time limit, which demonstrates how emerging this research topic is. The annual scientific production shown in Figure 2 indicates that most documents were published after 2021, coinciding with the end of the first year of the COVID-19 pandemic. This explains the Document Average Age of 1,84 years, reinforcing that most documents are very recent.

The novelty of the research topic also impacts document citations, as the low average age of publications has not yet allowed the establishment of a large number of citations. Thus, 481 citations were found, with an average citation per document of 7,516, as shown in Table 2. Figure 3 presents the average number of citations per year within the research sample timeline. As mentioned earlier, the decreasing citation trend in the graphic results from a short time after its publication.

In terms of authorship, the table shows that 209 authors contributed to the 64 documents, with only six publications being single-authored by six unique authors. On average, each document was authored by 3,28 co-authors, supporting an international co-authorship of 12.5%.

### *Leading Journals*

The documents included in the dataset were published by 47 sources (journals) (Table 2). The top 10 most productive journals are listed in Table 3. The diversity of journals' research areas, namely, management, psychology, and technology, leads us to conclude that remote employee well-being is gaining interest in different fields. In addition, as most journals will publish their first article by 2023, we can conclude the novelty and growing interest in this research field. The analysis of Bradford's Law (Figure 4) shows the correlation between journals and the number of articles published, dividing them into three clusters. The first cluster represents a small portion of journals that produced a major portion of published articles. The second cluster included a more comprehensive group of journals, and the third cluster included a broader group of journals. To our research sample, the first cluster encompasses eight journals, as illustrated in the highlighter square of the Figure, named Core Sources.

In terms of citations, Table 4 shows the most relevant journals and Figure 5 shows the most cited ones. The table shows journals' local impact and relevance using the H-index and G-index, which measure journal performance and significance. The Employee Relations Journal was the most influential source for both indices, followed by the International Journal of Human Resource Management. In contrast, the former had the highest number of local citations. The third-ranked journal was Current Psychology, which had a higher G-index than the H-index. Interestingly, Computers in Human Behavior, with just one recent publication, is the third-ranked journal in terms of the number of local citations.

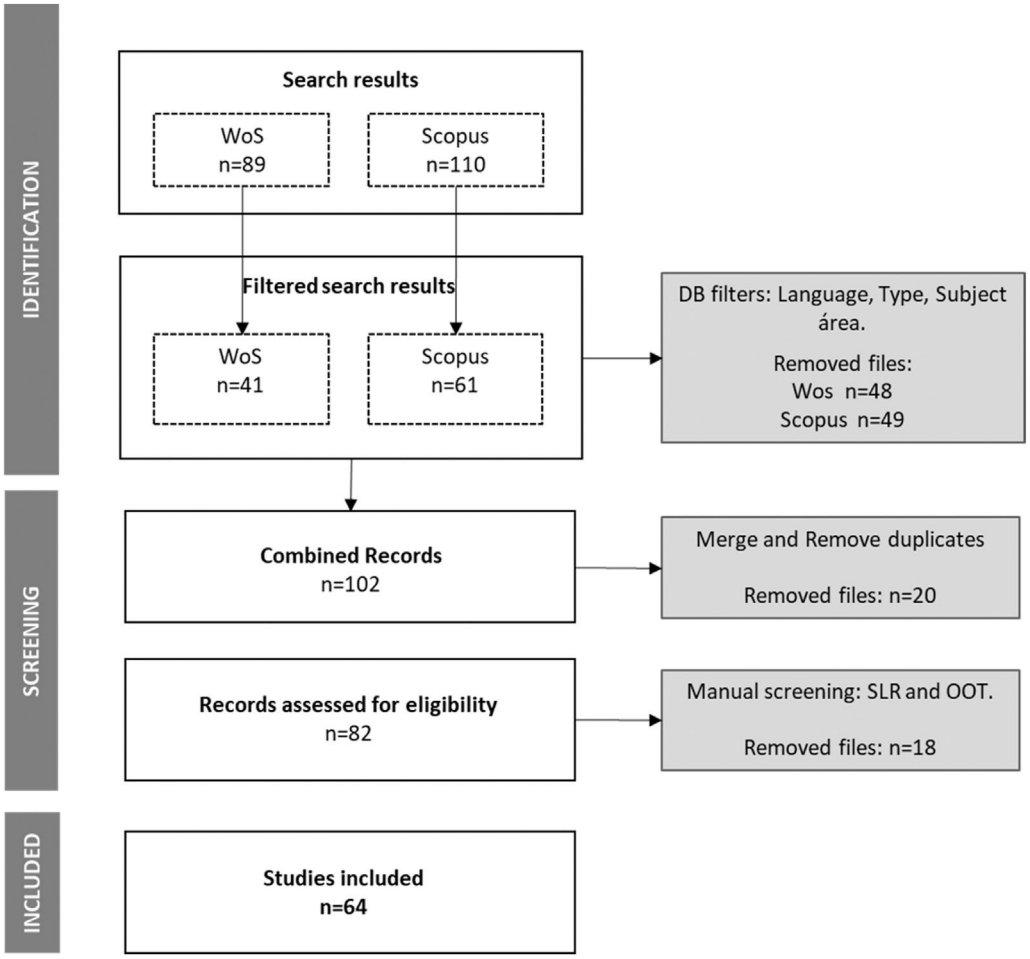


**Figure 1.** PRISMA Workflow.Source: Adapted from Page et al. (2021).

**Table 2**
Publication and Citation Trend.

| Description | Results |
|---|---|
| *Publication Information* | |
| Timespan | 2018:2024 (Jan) |
| Total Sources (Journals) | 47 |
| Total Publications | 64 |
| Annual Growth Rate % | 10.91 |
| Document Average Age | 1.84 |
| *Citation Information* | |
| Average citations per doc | 7.516 |
| Total Citations | 481 |
| *Authorship Information* | |
| Authors | 209 |
| Authors of single-authored docs | 6 |
| Single-authored docs | 6 |
| Co-Authors per doc | 3.28 |
| International co-authorships % | 12.5 |
| *Document Information* | |
| Articles | 55 |
| Articles – early access | 9 |
| Keywords | 279 |
| References | 4125 |

Source: Bibliometrix-R

In terms of impact sources, the Figure shows that three of the most influential journals were from the psychology field: the top-ranked Journal of Applied Psychology, the fourth-ranked Journal of Occupancy Health Psychology, and the last-ranked Applied Psychology – International Review. Furthermore, most impact journals belong to the management field, particularly the HR field (e.g., Journal of Vocational Behavior, Journal of Organizational Behavior, and Journal of Management). The remaining journals from the top 10 global impact rankings are from the field of technology, with a special emphasis on new technological work employment and computer –human behavior.

*Leading Authors*

Of the collected samples, 209 authors contributed 64 publications. However, by observing the most relevant authors (Table 5), we found that only one author (Perry S) had two published articles, whereas the remaining authors had only one publication to date. This can be justified by the novelty of the body of knowledge, with a timeline of only six years, which inhibits a more extensive number of publications per author. However, this topic only began to arouse the interest of most researchers with the advent of COVID-19, which urged employees to work outside the company's premises. These results are consistent with those of a new field of research in its early days.

Table 6 shows that the three authors who top the list of the 10 most influential authors are Hunter E., Perry S., and Rubino C. It is not surprising to note that the highest-ranked authors are those who have published the oldest articles in our sample (2018), enabling the observation of their contributions' maturity as time passes. Therefore, it is expected that the same will happen with the remaining articles in the sample, which were published in recent years.

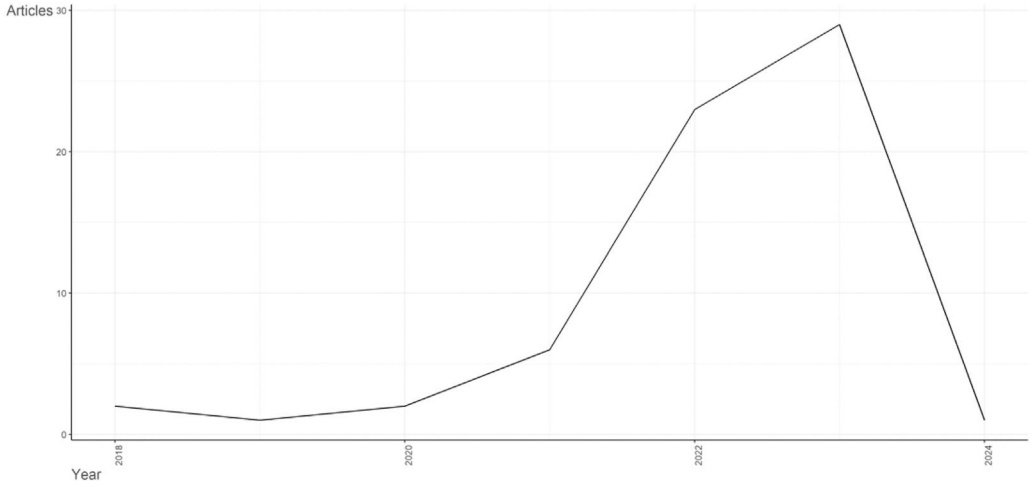


**Figure 2.** Annual Scientific Production.Source: Bibliometrix-R

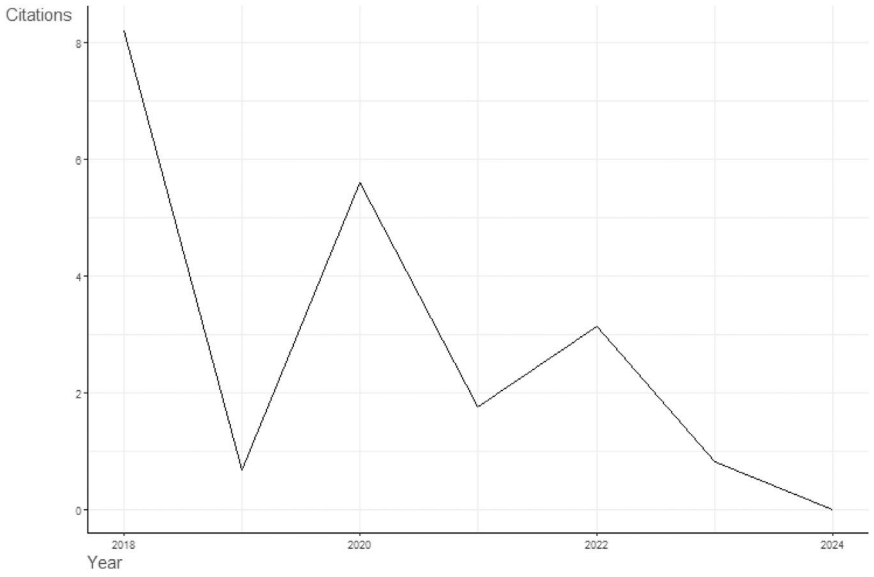


**Figure 3.** Average Citations Per Year.Source: Bibliometrix-R

**Table 3**
Top 10 Most Productive Journals.

| Journal | Articles | PY_start |
|---|---|---|
| EMPLOYEE RELATIONS | 5 | 2020 |
| CURRENT PSYCHOLOGY | 3 | 2023 |
| FRONTIERS IN PSYCHOLOGY | 3 | 2022 |
| INFORMATION TECHNOLOGY AND PEOPLE | 3 | 2022 |
| INTERNATIONAL JOURNAL OF HUMAN RESOURCE MANAGEMENT | 3 | 2018 |
| EMPLOYEE RESPONSIBILITIES AND RIGHTS JOURNAL | 2 | 2023 |
| INTERNATIONAL JOURNAL OF ORGANIZATIONAL ANALYSIS | 2 | 2023 |
| INTERNATIONAL JOURNAL OF WORKPLACE HEALTH MANAGEMENT | 2 | 2022 |
| NEW TECHNOLOGY WORK AND EMPLOYMENT | 2 | 2023 |
| PLOS ONE | 2 | 2021 |

Source: Adapted from Bibliometrix-R

*Leading Countries and Affiliations*

The 64 documents in the research sample were written by authors from 33 countries. Figure 6 shows a map of countries' scientific production. The largest contributing countries are the US, India, and the United Kingdom (UK). Together, these countries accounted for 36% of all publications. Europe is the most represented continent, followed by Asia and North America. Alternatively, the most cited country was the US, with a total of 142 citations, followed by Australia, with 81 citations, and the UK in third position with 70 citations (Table 7).

Regarding affiliation (Figure 7), Bucharest University of Economic Studies (Romania) was the most productive, with five articles published. With the same number of publications, Tampere University (Finland) was the second-most productive. Durham University (UK) and Edith Cowan University (Australia) were the third most productive affiliations, with four articles published.

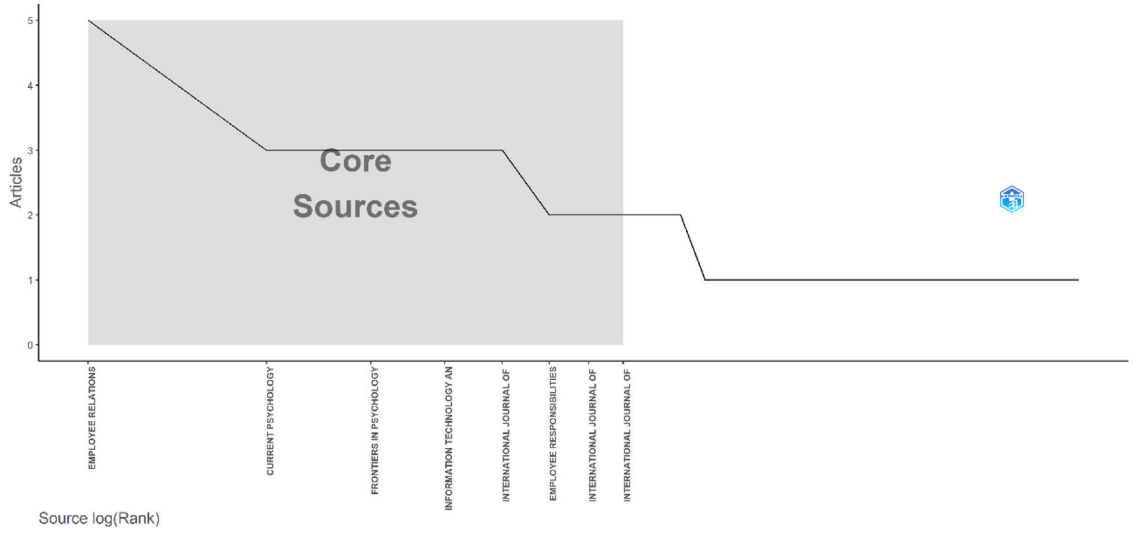


**Figure 4.** Core Sources by Bradford's Law.Source: Bibliometrix-R

**Table 4**
Most Relevant Journals.

| Element | h_index | g_index | TC | NP | PY_start |
|---|---|---|---|---|---|
| EMPLOYEE RELATIONS | 3 | 5 | 81 | 5 | 2020 |
| INTERNATIONAL JOURNAL OF HUMAN RESOURCE MANAGEMENT | 3 | 3 | 94 | 3 | 2018 |
| CURRENT PSYCHOLOGY | 2 | 3 | 10 | 3 | 2023 |
| INTERNATIONAL JOURNAL OF WORKPLACE HEALTH MANAGEMENT | 2 | 2 | 25 | 2 | 2022 |
| APPLIED ERGONOMICS | 1 | 1 | 16 | 1 | 2022 |
| APPLIED SCIENCES-BASEL | 1 | 1 | 7 | 1 | 2020 |
| COMPUTERS IN HUMAN BEHAVIOR | 1 | 1 | 40 | 1 | 2022 |
| EUROPEAN JOURNAL OF INNOVATION MANAGEMENT | 1 | 1 | 6 | 1 | 2022 |
| EUROPEAN JOURNAL OF TRAINING AND DEVELOPMENT | 1 | 1 | 1 | 1 | 2022 |

Legend: TC = Total Citations, NP = Number of Publications, PY = Publication Year. Source: Bibliometrix-R


**Figure 5.** Most Cited Sources.Source: Bibliometrix-R

**Table 5**
Most Relevant Authors.

| Authors | Articles | Articles Fractionalized |
|---|---|---|
| PERRY S | 2 | 0,53 |
| ABALKHAIL J | 1 | 1,00 |
| ABDULNABI S | 1 | 0,17 |
| ABOOBAKER N | 1 | 1,00 |
| ADAMOVIC M | 1 | 1,00 |
| ADENIJI J | 1 | 0,50 |
| AL D H | 1 | 0,50 |
| ALAM M | 1 | 0,17 |
| ALBERT L | 1 | 0,33 |
| ALSHAHRANI S | 1 | 1,00 |

Source: Bibliometrix-R

**Table 6**
Most Influential Authors.

| Element | h_index | g_index | m_index | TC | NP | PY_start |
|---|---|---|---|---|---|---|
| HUNTER E | 1 | 1 | 0,143 | 62 | 1 | 2018 |
| PERRY S | 1 | 2 | 0,143 | 62 | 2 | 2018 |
| RUBINO C | 1 | 1 | 0,143 | 62 | 1 | 2018 |
| ADAMOVIC M | 1 | 1 | 0,143 | 53 | 1 | 2018 |
| ALBERT L | 1 | 1 | 0,2 | 49 | 1 | 2020 |
| SUN Q | 1 | 1 | 0,2 | 49 | 1 | 2020 |
| WANG W | 1 | 1 | 0,2 | 49 | 1 | 2020 |
| AYDIN E | 1 | 1 | 0,333 | 40 | 1 | 2022 |
| ROFCANIN Y | 1 | 1 | 0,333 | 40 | 1 | 2022 |
| TASER D | 1 | 1 | 0,333 | 40 | 1 | 2022 |

Source: Bibliometrix-R

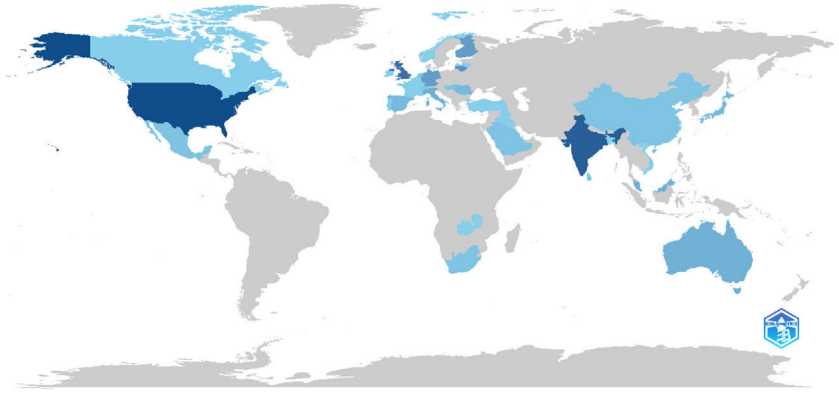

**Figure 6.** Country Scientific Production.Source: Bibliometrix-R

**Table 7**
Top 10 Most Citated Countries.

| Country | TC | Average Article Citations |
|---|---|---|
| US | 142 | 23,7 |
| AUSTRALIA | 81 | 27 |
| UNITED KINGDOM | 70 | 14 |
| ROMANIA | 33 | 16,5 |
| INDIA | 19 | 2,4 |
| IRELAND | 17 | 17 |
| ITALY | 17 | 8,5 |
| PORTUGAL | 13 | 13 |
| SWITZERLAND | 13 | 13 |
| FINLAND | 11 | 2,8 |

Source: Bibliometrix-R

*Leading Documents*

Analysis of the most cited documents allowed us to understand the core issues on the topic of remote employee well-being and shed light on emerging themes. Table 8 shows the top 10 of the most cited articles, both locally and globally. Perry et al. (2018) was the most significant publication in terms of global citations, whereas Adamovic (2018) was the most locally cited. The work of Perry et al. (2018) advanced the testing of the emotional stability of remote employees, whereas Adamovic (2018) studied the impact of HR practices on employee well-being within global virtual teams. The third position was occupied by Wand et al. (2020), who explored the impact of employee isolation on obtaining telecommuting benefits. Both topics preceded the events arising from the pandemic but anticipated concerns regarding worker well-being in remote contexts. The remaining documents focused on pandemic-related events.

The analysis of the most cited references according to our sample reference list (Figure 8) shows the Gajendran RS, 2007, J APPL PSYCHOL as the most cited reference, followed by the work of Wang B, 2021, APPL PSYCHOL-INT REV, and in the third position the Allen TD, 2015, PSYCHOL SCI BUBL INT reference. Notably, all the above references are from the psychological research field, which can be justified considering the potential consequences that changes in a worker's well-being in a remote context have on an individual's psychological and mental health.

*Science-Mapping Analysis*

Science-mapping analysis was performed to explore hidden knowledge clusters and theme trends (Mukherjee et al., 2022), namely through co-authorship and co-word analyses.

*Co-authorship Analysis*

Figure 9 shows the co-authorship networks for the articles in our research sample, where each node represents an author, and Figure 10 represents the author's country networks. Many of the articles were published during the COVID-19 pandemic and may be representing the local impact, or similar cultural countries, for the associated phenomena, since despite the globality of many measures, some aspects listed in the literature are influenced by local culture and state of development (e.g., Khan & Nasim, 2024). This explains the decoupling of the authorship relational networks, as can be seen from the isolation of each small relationship cluster.

However, the results of this analysis are not surprising, considering that in the performance analysis, we found that each author contributed to only one article, except for one author. Thus, the clusters

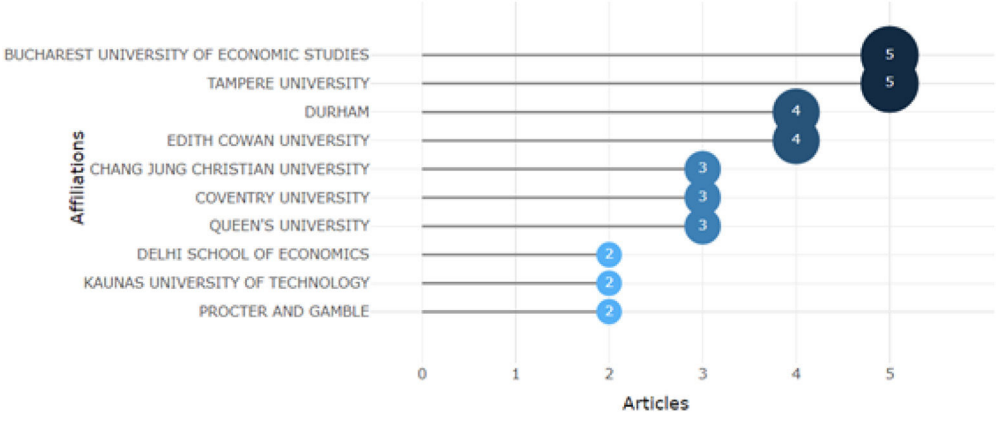


**Figure 7.** Most Relevant Affiliations.Source: Bibliometrix-R

**Table 8**
Top 10 Most Citated Documents.

| Document | DOI | Year | LC | GC | LC/GC (%) | NLC | NGC |
|---|---|---|---|---|---|---|---|
| Perry et al., 2018 | 10.1080/1359432X.2018.1487402 | 2018 | 1 | 62 | 1,61 | 0,67 | 1,08 |
| Adamovic, 2018 | 10.1080/09585192.2017.1323227 | 2018 | 2 | 53 | 3,77 | 1,33 | 0,92 |
| Wand et al., 2020 | 10.1108/ER-06-2019-0246 | 2020 | 0 | 49 | 0,00 | 0,00 | 1,75 |
| Taser et al., 2022 | 10.1016/j.chb.2021.107020 | 2022 | 1 | 40 | 2,50 | 23,00 | 4,24 |
| Mihalca et al., 2021 | 10.24136/oc.2021.010 | 2021 | 1 | 30 | 3,33 | 6,00 | 4,29 |
| Cooke et al., 2022 | 10.1080/09585192.2021.2021732 | 2022 | 0 | 28 | 0,00 | 0,00 | 2,97 |
| Charalampous et al., 2022 | 10.1108/ER-02-2021-0058 | 2022 | 0 | 23 | 0,00 | 0,00 | 2,44 |
| Jeske, 2022 | 10.1108/IJWHM-02-2021-0042 | 2022 | 0 | 17 | 0,00 | 0,00 | 1,80 |
| Mcallister et al., 2022 | 10.1016/j.apergo.2022.103749 | 2022 | 0 | 16 | 0,00 | 0,00 | 1,70 |
| Elbogen et al., 2022 | 10.1089/cyber.2021.0257 | 2022 | 0 | 15 | 0,00 | 0,00 | 1,59 |

Legend: LC = Local Citations, GC = Global Citations, NLC = Normalized Local Citations, NGC = Normalized Global Citations.
Source: Bibliometrix R.

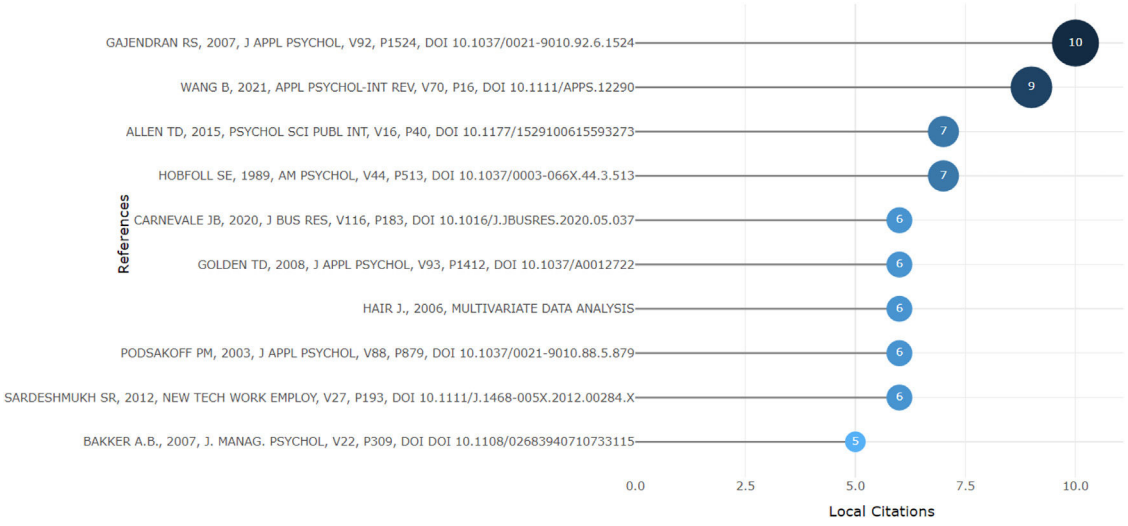


**Figure 8.** Most Local Cited References.Source: Bibliometrix-R


**Figure 9.** Most Local Cited References.Source: Bibliometrix-R

in these Figures represent the co-authorship of each document and the author's country of origin, which indicates that extensive relationships with research colleagues are still to be developed. Nevertheless, the maturity of this research field should include the enlargement and enrichment of these networks of contributors, as it is crucial to enable knowledge sharing and the discussion of different points of view in the development of more robust evidence and theories.

*Co-word Analysis*

The initial step in the co-word analysis was to assess the most relevant keywords (Figure 11) in the field of research and ascertain their evolution over time (Figure 12). As shown in the first Figure, in addition to the words remote work and employee well-being that result from the database search, the word COVID-19 appears, which clearly demonstrates the context of the inquisition of a large part of the articles in the sample. The following words in the ranking indicate the most relevant themes addressed by the studies: technostress, work and employee engagement, job satisfaction, work–life balance, and emotional exhaustion. In addition, through the word evolution graph, we can conclude that the terms well-being, remote work, and, notably, COVID-19 have seen significant growth since 2021. This reinforces the relevance of these themes in the current body of knowledge. Furthermore, the first occurrence of terms such as emotional exhaustion and technostress in 2020 shows a greater

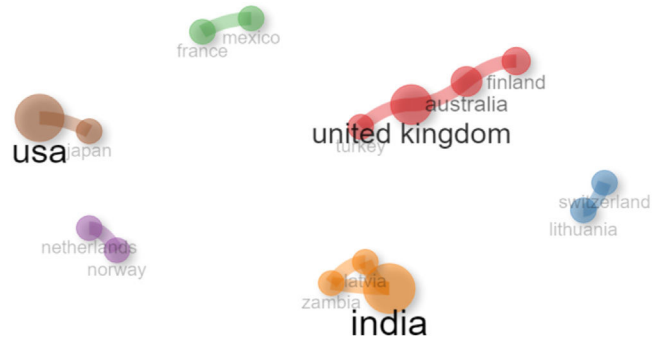


**Figure 10.** Most Local Cited References.Source: Bibliometrix-R

awareness of the possible adverse effects that extensively digitalized work environments can have on workers.

The co-word network analysis shown in Figure 13 enables the identification of clusters of common research themes. As we can observe from the Figure, two major clusters of keyword networks appear—one (left) led by the term employee well-being and the second (right) by remote working. The cluster on the left mainly includes work-related terms that have recently been addressed along with employee well-being, such as job satisfaction, HRM, work–family balance, and work engagement. The second cluster comprised terms related to the affective and social dimensions of well-being (Van Horn et al., 2004), namely emotional exhaustion, social support, mental health, and technostress. Surprisingly, these terms were grouped into the remote work cluster and not the employee well-being cluster. Studies have explored several dimensions of employee well-being, namely digital well-being, during remote work, although it is not always associated with the employee well-being construct. This may provide clues to the need for greater standardization and clarification of the concepts used in various research endeavors.

Finally, to broaden the scope of the word occurrence analysis, we created a word cloud based on the titles of the articles (Figure 14). This analysis allowed us to obtain a graphical perception of the terms most frequently used in the titles of the study samples. Complementing the previous analysis, we observe the appearance of terms related to organization, digital, management, and role-playing. These terms help outline the paths of research and uncover subtopics that have captured researchers' interest. Considering that the expectation is that remote work will remain and continue to disrupt traditional forms of work (e.g., Sahut & Lissillour, 2023), it is expected that the concerns arising from those working models will continue to dominate the research field.

## Descriptive Analysis

### *Content Analysis*

Content analysis was performed to answer RQ 3, and all 64 articles retrieved were thoroughly reviewed to understand the current state-of-the-art. Each article was classified according to the study focus (Employee or Organization), timespan (Previous to, During, or Post-COVID), methodology used (Theoretical or Empirical, either Qualitative, Quantitative, or Mixed Methods), and whether it explicitly recommends that organizations promote remote workers' digital well-being (see the full table in the Appendix).

Regarding the analysis period, studies conducted during and after COVID account for 90% of the sample. This Figure is coherent with the rising remote work due to pandemics, which has unveiled new challenges and issues for organizations. (Herden et al., 2021). Nevertheless, it is crucial to understand the differences during and after COVID, as some imposed restrictions ended with the pandemic (McPhail et al., 2024). It is not surprising that 30% of the studies were performed specifically after COVID to highlight the actual challenges arising in this new working format without the influence of pandemic-related issues.

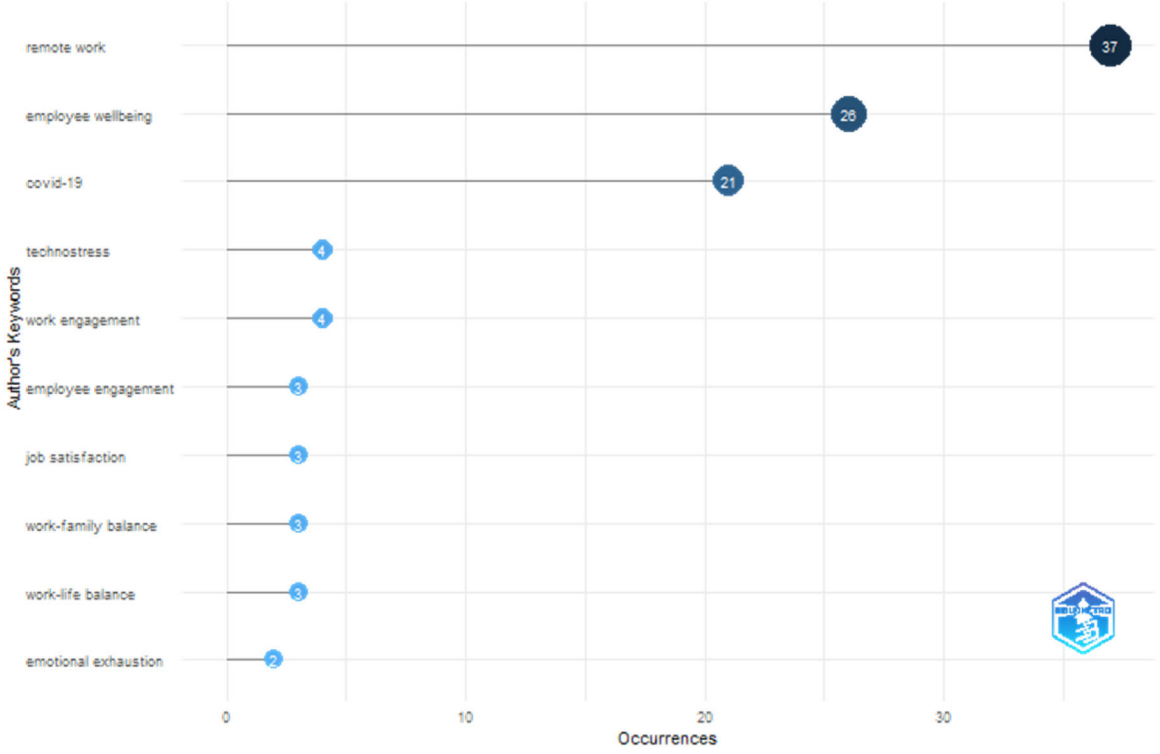


**Figure 11.** Most Relevant Words (From Keywords).Source: Bibliometrix-R

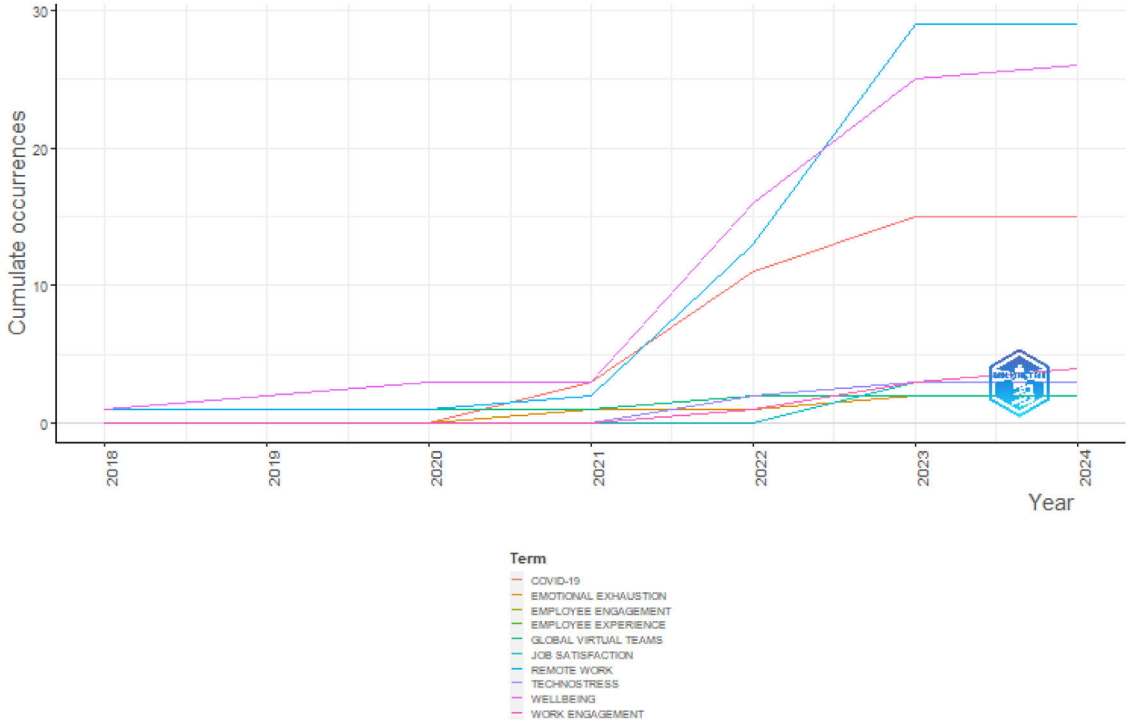


**Figure 12.** Words Evolution Over Time.Source: Bibliometrix-R


**Figure 13.** Author's Keywords Co-occurrence Network Analysis.Source: Bibliometrix-R


**Figure 14.** Word Cloud From Publication's Titles.Source: Bibliometrix-R

Although Chatterjee et al. (2022) highlighted that workspace arrangements concern both employees and companies, only 20% of the articles in our sample focused on organizations. However, 75% of the total analyzed refers to the need for organizations to create or adapt the necessary policies or strategies to face emerging challenges, confirming the importance of these concepts.

As working conditions are intrinsically linked to an organization's performance (Oakman et al., 2020), the digital well-being of remote workers is of utmost interest to companies, yet no new theoretical framework or inclusion in existing frameworks has been verified (Torres et al., 2023). In the absence of a legal framework, some authors classify these issues as ethical, suggesting their inclusion in existing CSR and CDR frameworks (Carroll, 2021; Herden et al., 2021; Lobschat et al., 2021; Navickas et al., 2021). However, despite this need being identified, only 10% of the collected studies focus on the theoretical development of this field, which suggests a clear need for additional research.

### *Future Research Trends*

One of the objectives of a bibliometric analysis is to disclose gaps in the literature and uncover opportunities for future research. In addition to the insights provided by the results presented thus far, it is still missing an analysis of the evolution of research topics to date, and the most emerging ones in the field of remote worker well-being was conducted. In addition, we intend to understand how organizational perspectives have been addressed in the literature.

Considering the six-year timeline of the articles in our sample, we divided these into three distinct periods: pre-COVID-19 (until 2020),

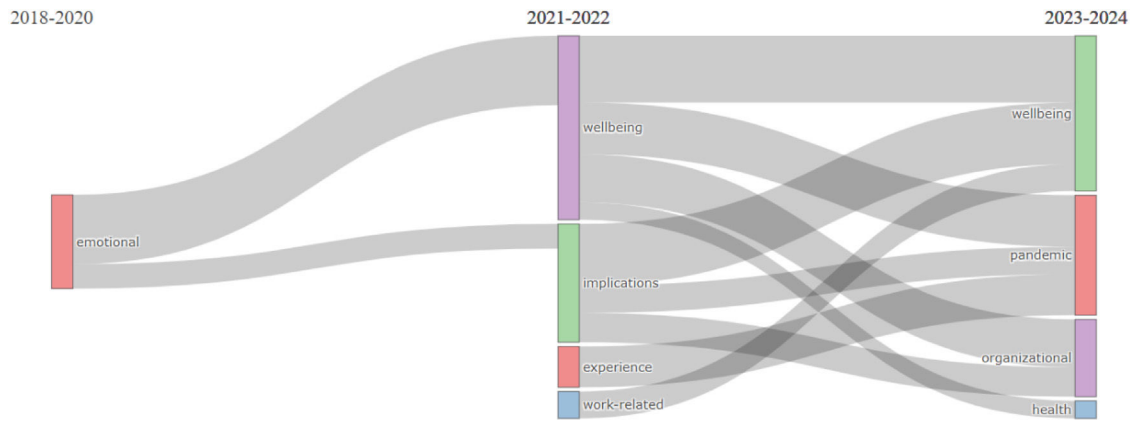


**Figure 15.** Thematic Evolution Based on Abstract.Source: Bibliometrix-R

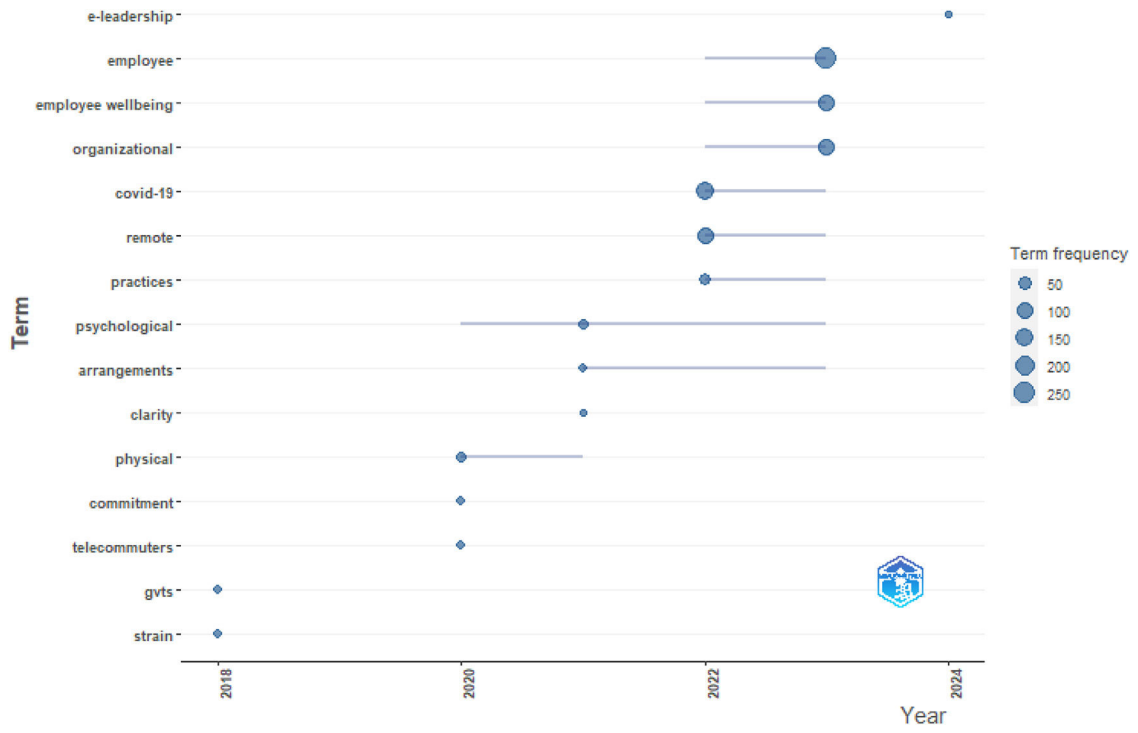


**Figure 16.** Trend Topics Based on Abstract's Analysis.Source: Bibliometrix-R

during the COVID-19 pandemic (between 2021 and 2022), and after the pandemic, when all measures had already been removed and people experienced the "new normal" (since 2023). According to these three moments, Figure 15 shows the thematic evolution based on the articles' abstract analysis. The results show an expansion of themes researched since the beginning of the pandemic, which previously focused on the emotional components of individuals, particularly those linked to globally dispersed teams, as seen in the previous analysis. From 2021 onwards, research has begun to integrate the concept of well-being and explore its impact and implications in relation to remote work (e.g., Clausen et al., 2023). Organizational concerns have only emerged after 2023, namely regarding employee health and well-being (Orlandi et al., 2024), after the experience of living during the COVID-19 pandemic.

Furthermore, we analyzed the main topic trends based on the abstracts to shed light on future research opportunities. In line with the conclusions from the previous Figure, the results in Figure 16 show that the literature before the pandemic focused on issues related to geographically dispersed teams, whereas in 2020, studies addressed more concerns about the physical health of employees. In 2021, the rise of researchers' interest in workers' psychological concerns is evident, which continued in the following years, evolving toward more comprehensive concepts such as employees' well-being in a remote context. Starting in 2023, the most emerging themes in this field of research arose, namely, the focus on the organizational perspective and the measures that they must implement to increase worker well-being in more flexible work models.

The organizational perspective emerged as a major trend as organizations realized that leading remote workers and preparing firms for this new reality in the context of sustainable development is perhaps one of their significant challenges and concerns. Bailey and Kurland (2002) were among the first to address the balance of workload between in-person and remote workers from an organizational perspective. Specifically, they raised concerns regarding the productivity of in-person workers. Bailey and Kurland (2002) speculated that in-person workers would interact more because of the absence of remote workers, potentially compromising their productivity and leading to exhaustion. By allowing some workers to work from home and others from the office, an eventual increase in the well-being of the former may be achieved by sacrificing the latter.

Remote team managers experience new challenges that directly impact remote workers, such as building trust, providing proper support to avoid overworking (closely related to well-being), reorganizing work, and establishing sound relationships between leaders and subordinates in virtual teams (Grant et al., 2013). Related issues, such as the control of remote workers, cybersecurity, team cohesion, organizational trust, and finding the right balance between using increasingly complex computer-mediated surveillance to control remote workers and maintaining their privacy, have been reported in the literature as current challenges that organizations must address to ensure higher performance and stronger well-being of remote workers (Cunha et al., 2024; Kalischko & Riedl, 2023; Olawale et al., 2024; Pianese et al., 2023).

These challenges led to the development of a new concept called e-leadership. E-leadership, as in the sample, represents a leadership style more suited to this new work reality, with challenges that differ from traditional work settings (Tigre et al., 2023).

Therefore, future research should follow these two new trends (see Figure 15) to (1) understand the new organizational challenges and their response to the working models and (2) what organizations can implement to ensure remote workers' well-being. This research agenda goes hand in hand with the UN's 8th Sustainable Development Goal (SDG) to promote productive and decent work for all (Sustainable Development Goals, 2024) to understand how remote work can be used or is used to achieve SDG 8. More specifically, how remote work can help to bring new individuals to the job market, allowing for a more inclusive market with lower gender bias.

## Discussion

We formulated three RQs through a bibliometric analysis of the literature on remote worker's well-being. An initial search of CSR and remote employee well-being did not yield useful results; therefore, we conducted a more comprehensive search to better understand how this research domain has been explored. This analysis was then complemented with a content analysis of the articles in the sample to understand organizational efforts on this topic.

To answer RQ1, we performed a performance analysis of the sample articles. In general, we found that publications in the field of remote employee well-being have grown notably in the last three years, especially in response to the COVID-19 pandemic; therefore, it is considered a prominent topic with significant growth. Such growth has also been recognized in other recent reviews and bibliometric analyses, namely Błaszczyk et al. (2023) and Khan and Nasim (2024), highlighting major transformations in the work context. Similar to this study, these studies also reported low citation results whenever the short publication time did not allow the citation rate to mature. It is important to note that, in our sample, almost half of the journals published their first article in this area by 2023, reinforcing the novelty and growing interest in these themes.

The analysis of sources concluded that the journal Employee Relations was the most productive, with the publication of five articles in the last four years, followed by Current Psychology (three) and Frontiers in Psychology (three). Furthermore, it was possible to conclude that the most productive journals are in the field of psychology, although journals in the field of management and technology, from a humanistic perspective, are also represented in the top 10. This variety of research fields is consistent with previous studies on the well-being of employees and reinforces the multidimensional nature of this construct (Charalampous et al., 2019). In addition, Khan and Nasim (2024) noted that multiple theories from psychology, management, and technology should be integrated to fully understand this new reality. Regarding the journals receiving the most citations, Employee Relations was the top-ranked in terms of H-index and G-index, whereas the International Journal of Human Resource Management recorded the highest number of citations.

Despite the 209 authors who contributed to the 64 articles in the sample, the analysis of the most prolific academics yielded somewhat limited results, as only one author (Perry S.) contributed to more than one publication. This result has an impact on several other analyses (e.g., collaboration networks), highlighting the novelty of the research field that has not yet had time to gain maturity, as the average time per publication is only 1.84 years. Therefore, it is not surprising that the most influential authors wrote the oldest articles in the sample (Hunter E., Perry S., Rubino C., and Adamovic M.).

The most prominent country analysis revealed that authors from 33 countries wrote 64 articles in the sample. Although the three countries with the highest number of published articles are the US, India, and the UK, Europe is the most representative continent. The three countries with the highest number of citations from affiliated authors are the US, Australia, and the UK. These results are comparable to those reported in several reviews that consider the phenomenon of remote work settings (e.g., Khan & Nassim, 2024; Lunde et al., 2022; Oakman et al., 2020). This may not be surprising, given the driving forces behind the adoption of remote working (Ferreira et al., 2021). Developed countries may provide the technological enhancements needed to implement more flexible work models (Kraus et al., 2023) and are also more likely to be pioneers in prioritizing the well-being of these workers (Elufioye et al., 2024; Wolf et al., 2024). However, as expected from the results of the authors' collaboration networks, there are still no extensive collaboration networks between countries; therefore, most studies still focus on publishing more local realities based on a country's culture. The integration of these perspectives is necessary to promote knowledge development and build the foundations of human and well-being-oriented strategies, as advocated by McPhail et al. (2024).

RQ2 was addressed through science mapping analysis, which assessed the intellectual structure of the research field in terms of collaboration networks and themes that have received the most attention in this field of research. Regarding collaborative networks between authors, the research still scratches the surface, meaning that intellectual coalition networks have not yet been established. However, the establishment of these networks demonstrates maturity in the research field and allows the advancement and improvement of the quality of theories and results (Cisneros et al., 2018). Therefore, to evolve this research field, collaborative and sharing efforts must be established within the scientific community.

The co-word analysis revealed that, apart from the words used in the research, the most relevant terms address themes linked to stress, such as technostress and emotional exhaustion (e.g., Thurik et al., 2024), themes linked to attitudes toward work, such as work engagement and job satisfaction (e.g., Muhammed & Sivasubramanian, 2022), and themes related to the challenge of work–life balance (e.g., Petru et al., 2023). Furthermore, it was also possible to conclude that publications on well-being and remote work have seen noticeable growth since 2021 and that some of the relevant themes have appeared in articles since the pandemic, demonstrating greater awareness of the possible negative effects of remote working (Elufioye et al., 2024). Nevertheless, the events of the COVID-19 pandemic were based on circumstances different from the "new normal" we are currently experiencing. The persistence of the effects reported in studies conducted during this period remains unclear (McPhail et al., 2024), and further research on these topics is fundamental (Ferreira et al., 2021).

Analysis of co-occurring keywords identified two distinct clusters that represented critical topics in the intellectual structure of the research field (Xu et al., 2018). Cluster 1—employee well-being—includes mainly work-related terms, such as HRM and global virtual teams. Cluster 2—remote working—comprises terms separately related to the affective and social dimensions of well-being (Van Horn et al., 2004). These results suggest that the two constructs should be combined and explored from an integrated perspective

(Khan & Nasim, 2024; Lunde et al., 2022; Marsh et al., 2022). Therefore, future research should focus on greater standardization and clarification of concepts to avoid division and proliferation.

This field of research, which is still in its early stages, presents numerous opportunities. Specifically, related to our last objective (RQ3) of trying to understand how the literature has addressed organizational efforts to promote the well-being of remote workers, we found that there are very few publications on the topic and some with anecdotal evidence. Previously, Chatterjee et al. (2022) and Kanapathipillai et al. (2023) noted a lack of research on how organizations should strategically prepare to address these new challenges; our results confirm this research gap, namely when considering the well-being of such employees.

To answer RQ3, we performed a content analysis of the articles in our sample, classifying the time frame of each study in terms of pandemic evolution, methodological approach, and unit of analysis. The aim was to understand how organizational concerns and policies are addressed by the body of knowledge. The results showed that more than 50% of the retrieved studies aimed to understand the events that occurred during the pandemic. Nevertheless, several authors have claimed the need to continue studying this topic in the new post-pandemic context (McPhail et al., 2024).

Regarding the methodology used in the articles, the majority used quantitative methods based on surveys, which is surprising because this research field is still poorly studied. Considering the novelty of the context experienced, our suggestion is that exploratory studies, within a qualitative nature, can help support new theories, validate existing ones, and clarify concepts.

The main implication of our findings for organizations is that they must develop new skills and implement new methods to navigate this new virtual world, in which top management plays a crucial role in implementing effective remote work policies (Byrd, 2022; Chatterjee et al., 2022; Kohont & Ignjatović, 2022). These skills and competencies should focus on centering the employee on organizational concerns to achieve higher performance with an optimal balance between autonomy and work–life balance (Metselaar et al., 2023). To this end, organizations should ensure adequate conditions and support for remote workers to develop their work, addressing the challenges highlighted thus far.

As it is unclear to what extent these initiatives should be incorporated into organizations' CDR (Bednárová & Serpeninova, 2023), we suggest exploring the incorporation of organizational measures and strategies that enhance the well-being of remote workers in the organizations' CDR as a constituent of the organizations' CSR.

In the context of social responsibility, the relevance of well-being in supporting and enhancing organizational performance, as reported here, also has implications for public policies. It supports countries and institutions that already have labor laws in place to protect the well-being of remote workers. Legislative action can improve the well-being of remote workers by promoting changes to labor laws that enforce the adoption of measures that contribute to safe working environments and a healthy balance between work and personal life (Bartmann et al., 2023). Such concerns are well established in the European Union, even in a broader context. Since 1989, Directive 89/391/EEC, dated June 12, 1989, has promoted the adoption of measures to increase workers' well-being (including remote workers). More recently, Spain and France pioneered the adoption of legislation recognizing the right to disconnect from work during rest time to protect employees from abuse (Lerouge & Pons, 2022).

## Conclusions

Through rigorous methods and procedures, this research allowed us to understand the state of the art in remote workers' well-being. The objective of the investigation was not only to carry out a quantitative analysis of the performance of publications and the intellectual structure of the field but also to understand future trends in this field of research.

After developing the bibliometric analysis, a content analysis of the articles was performed to ascertain their timeframes and the focus of each work at the employee versus organizational level. The literature in this area of research is still in its infancy, with most research adopting the employee's perspective at the cost of the organizational perspective. Studies addressing organizations and their internal policies are scarce, representing only approximately 20% of the studies analyzed. Nevertheless, most articles make clear recommendations to organizations to establish or redefine these internal policies.

This circumstance is surprising considering that in 2002 (27 years after Nilles (1975) coined the term telecommuting), Bailey and Kurland (2002) reported the need to expand the focus of research from teleworkers to all parties, including organizations. Moreover, previous studies have shown that the impact of organizations' policies and strategies is crucial in (1) the successful implementation of these more flexible work models and (2) improving workers' well-being, which is a necessary condition for achieving the benefits expected from these models.

Therefore, this work supports the persistence of this gap in the literature, in which resolution is pivotal not only for practitioners but also to allow the academy to better understand the phenomena inherent in remote working.

This study addresses prior demands to conduct more studies on these topics (Saridakis et al., 2023; Kanapathipillai et al., 2023) and contributes to the body of knowledge in several ways. First, it structurally presents the research conducted thus far on remote employee well-being. Second, it provides several research directions and emerging opportunities for future research, offering a reference guide for academics entering the field and wanting to contribute to the literature on remote employee well-being, as discussed in the previous section.

Alternatively, it provides organizations and practitioners with topics to reflect on the need to adapt or create the most appropriate practices and initiatives for such new work models. From a social and ethical perspective, this study also promotes awareness of the negative aspects that ICTs can have on employees. Such an ethical perspective allows us to rethink how organizations can adapt or develop their internal CSR or even CDR policies to centralize the promotion of the well-being of remote workers.

Organizations are expected to benefit from enhanced performance through the promotion of employee well-being and productivity. However, organizations also benefit from the ability to attract and retain talent by demonstrating a genuine concern for the holistic welfare of their human capital. Ultimately, improving the well-being of remote workers will positively impact economic growth, a finding of significant relevance for public policymakers.

Despite our best efforts, this study is not without limitations, many of which stem from the intrinsic nature of bibliometric analysis. While utilizing both the Scopus and WoS databases allows for a broad analysis of high-quality papers, it is not fully comprehensive and may include errors that are difficult to detect. This issue is particularly pertinent to novel topics that have a limited number of published papers and a significant amount of ongoing research. The selection of keywords also introduced a certain bias, potentially excluding related studies with different terminologies. Additionally, the databases used favored research published in English, which may have resulted in the exclusion of relevant work from non-English-speaking regions. Finally, we acknowledge that certain analyses, such as content analysis, are qualitative and introduce a degree of subjectivity to the findings.

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## CRediT authorship contribution statement

**Joana Ribeiro:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Filipa Pires da Silva:** Writing – review & editing, Writing – original draft, Validation, Supervision, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Pedro Rino Vieira:** Writing – review & editing, Writing – original draft, Supervision.

## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jik.2024.100595.

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