



Understanding the Quality and Performance of Work from the Perspective of Sustainable Work

Lorena Bittencourt Bastos¹ 
Marlene Amorim² 
Mário Rodrigues³ 

Received: August 31, 2023
Accepted: January 5, 2024
Published: March 16, 2024

Keywords:

Sustainable work;
Quality of work;
Digital technologies;
Workers' well-being;
Performance



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-Non-Commercial 4.0 License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission.

Abstract: *Many work contexts are now characterized by the adoption of digital technologies. As digital contexts become ubiquitous in both work and personal contexts the characteristics of workspaces change. This drives the call for understanding how they affect the quality of work and the well-being of individuals. This study examines the factors that determine the quality and sustainability of the workforce, channeling studies involving remote working. The paper is based on a systematic review of the literature addressing work quality and sustainability in remote working contexts. The study builds on recent research work conducted by Eurofound, the European Foundation for the Improvement of Living and Working Conditions, subscribing to the dimensions proposed to frame the work on sustainability and to categorize the findings from the literature. The paper aims to identify variables that affect the satisfaction, well-being and productivity of remote workers. The study builds on the Scopus database, for critical and exploratory analysis of the concepts addressed in the term "sustainable work", searching in abstract or title, between 2018 and 2023, leading to the identification of 243 publications. The study allows for the advancement of our perception regarding the impact and relevance of the theme addressed in the work, and that can be used as a basis for the continuation of the study, in the development of sustainable management strategies focused on facing the challenges of implementation of effective remote work systems.*

1. INTRODUCTION

With the evolution of technology in recent years, there has been a restructuring in working methods and workers' conditions. This includes changes in processes and physical work arrangements. Given this scenario, teleworking has been gaining more space in the market, as a new model of working and interaction between organizations and workers, thus providing greater flexibility in planning tasks, and managing time, environment, and method of execution (De Carlo et al., 2022). The working methods are constantly and dynamically changing, and adapting to the inevitable changes in the working methodologies, driven by various social, environmental, and technological factors (Bharti et al., 2022). The authors Sadłowska-Wrzesińska et al. (2022) conceptualize sustainable work as a job in which workers can perform their professional activities without endangering their physical and/or mental health. Teleworking is often advocated for its benefits concerning environmental and social sustainability, favoring the reduction of travel and work traffic, consequently increasing flexibility and reachability in the professional area. Throughout the COVID-19 pandemic, a significant increase in the number of teleworkers was noticeable, and there is a trend towards the permanence of this new working method in the post-pandemic period across organization and business sectors (Widar et al., 2022).

¹ University of Aveiro, Santiago Campus, 3810-193, GOVCOPP & DEGEIT, Aveiro, Portugal

² University of Aveiro, Santiago Campus, 3810-193, GOVCOPP & DEGEIT, Aveiro, Portugal

³ University of Aveiro, Santiago Campus, 3810-193, IEETA & ESTGA, Aveiro, Portugal

2. CONCEPTUAL BACKGROUND OF THE STUDY

The change from conventional face-to-face work to models of remote work is associated with the digitization of processes. Recently, the restrictions caused by the COVID-19 pandemic, had an impact on working models, related to social sustainability, changing the work environment, organizational innovations, as well as the well-being, performance and conduct of employees with such changes (Babapour Chafi et al., 2022).

Against this background, it is crucial to understand the difference between the periods before, during, and after the COVID-19 pandemic. Before the pandemic, few employees worked from home (around 5% in the US), and most did so of their own volition. Likewise, the scenario in the European Union was one where only 3.2% of employees worked remotely. During the pandemic, due to lockdown restrictions, several workers were forced to work remotely – estimated as 39% in the EU and 50% in the US. After the pandemic situation, several studies were carried out highlighting the effects of the pandemic on the organization and working methods, notably addressing the persistence of hybrid working methods that include some extent of remote work (Babapour Chafi et al., 2022).

The concept of work sustainability encompasses environmental optimization, efficiency, and quality of life at work. Characteristics that provide greater organizational and worker resilience, with the ability to meet the different ways of working (Eriksson et al., 2022).

A viable method for assessing quantitative and qualitative trends in research activities over time is bibliometric analysis. In which, it utilizes databases and characteristics of literature metrology. This method has become common in academic studies. Given this, bibliometric studies have advanced considerably in scientific studies in recent years (Xie et al., 2020).

3. DATA AND METHODS

In the present study, a systematic literature review was conducted, to identify the most relevant research in the literature, focused on the quality and sustainability of the workforce, specifically focusing on the factors that affect the quality of work and the well-being of teleworkers. The study was based on the guidelines of research methodologies presented by Kitchenham, et al. (2009), which involve three stages, namely: (i) planning the review; (ii) conducting the selection of articles and the review; and (iii) reporting the review (Bastos et al., 2023).

3.1. Planning the Systematic Literature Review

Variables that affect the quality of work life and that play an important role in productivity and individual well-being have been studied for decades. The growth in the adoption of digital technologies in recent years, forcing many people to work remotely, has shed new interest in the topics since new variables might be at stake (Rasool et al., 2020). Given this scenario, the article aims to carry out a systematic review of the literature, concerning the most recent studies on this topic. The study addresses the following question: What are the most relevant studies in the literature focusing on the sustainability of work, and how do they align with the dimensions of sustainable work proposed by Eurofound?

3.2. Carrying Out Article Selection and Review

In this paper, we investigate the recent and significant studies on workforce quality and sustainability, to identify and analyze the academic works on this topic, comparing their contributions in the literature. During the study, a bibliometric analysis was carried out using the VOSviewer software tool, in order to compare the studies from different countries, regarding citations, correlating them with the keywords, titles, and abstracts used in the studies analyzed. To conclude the analysis of the article, these studies were analyzed towards the research carried out by Eurofound, a European Foundation for the Improvement of Living and Working Conditions, which proposes the aggregation of the determinants of quality and sustainable work in seven dimensions, namely: (i) physical environment; (ii) work intensity; (iii) quality of working time; (iv) social environment; (v) skills and description; (vi) perspective and (vii) income.

3.3. Report of the Review

The study analyzed publications between 2018 and 2023, indexed in the Scopus database. The search took place in May 2023, using the term “sustainable work” in the abstract or title, leading to the preliminary access of 243 journals. The refined search criteria were: (i) by document type (article), thus making 171 journals available; (ii) language (English), with 163 journals available and (iii) open access, making 113 journals available. The data collected covered the year of publication, authors, country, institution, journal, citation count, and abstract. When analyzing the research data, a trend was observed in the period of the COVID-19 pandemic in relation to the context of labor sustainability, due to the increase in the number of publications between the years 2020 and 2022, the years that followed the pandemic, as shown in Figure 1. In the year 2020, there were 50 publications (22%), the year 2021 with 57 publications (23%) and the year 2022 with 53 publications (21%).

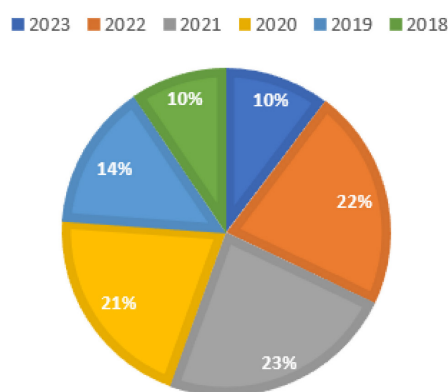
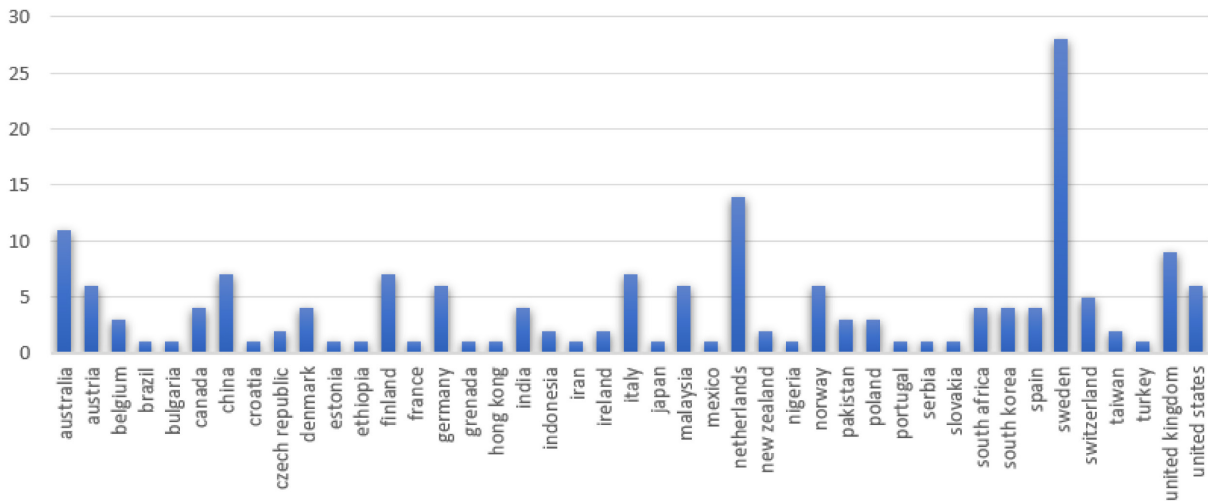


Figure 1. Publications using the term “sustainable work” from 2018 to 2023

Source: Own research

During the research, 43 different countries were identified, among these countries, Sweden was the country that published the most scientific articles in the area (28), followed by the Netherlands (14), then Australia (11), as shown in Graph 1.

The analysis of the selected articles used the VOSviewer software to analyze the co-authorship relationships existing in the countries under analysis. Sweden stands out due to its higher number of publications on the topic of labor sustainability. In the software filtering procedure, countries with at least 5 published articles were selected.



Graph 1. Distribution of the number of publications by country

Source: Own research

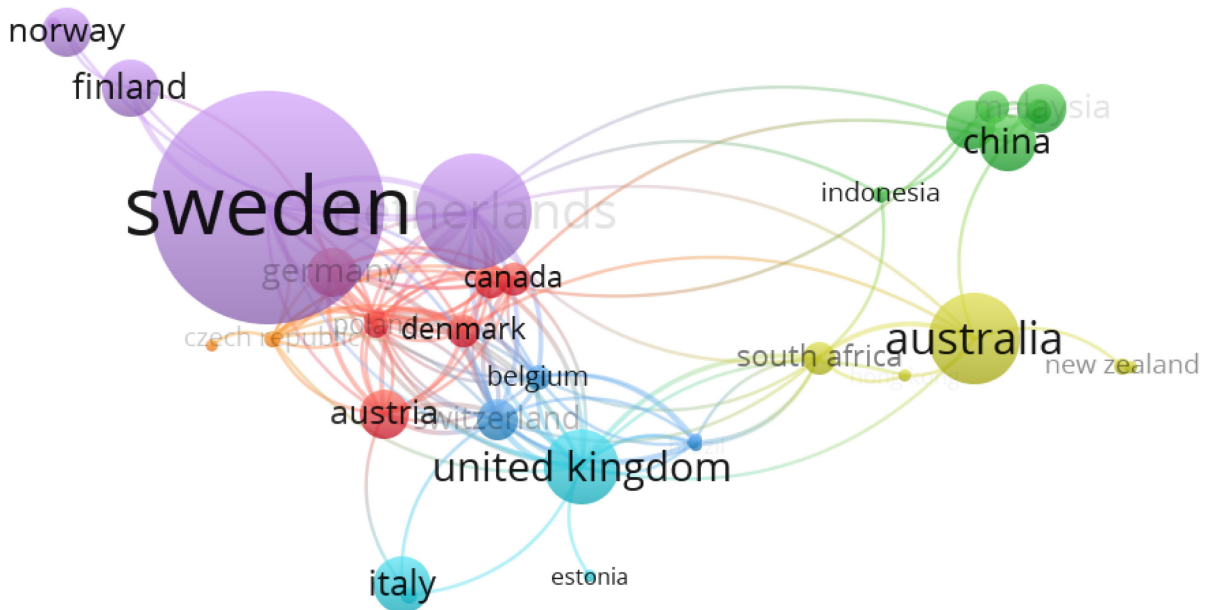


Figure 2. Network map between countries in the context of labour Sustainability

Source: Own research

According to Figure 2, of the 43 countries selected for the study, it is noteworthy that Sweden is the country with the most publications on the topic of labor sustainability and shows a close relationship with research carried out in the Netherlands, Finland, Austria, Denmark, Canada, Belgium, and the United Kingdom.

4. STUDY RESULTS AND CONTRIBUTIONS

In the analysis performed with the VOSviewer software, regarding the co-occurrence of keywords in the analyzed studies, the minimum number of occurrences, which was defined as 1, and the minimum number of clusters, 50, were taken into account. This resulted in a total of 1,201 keywords and 13 clusters. Among the 1,201 keywords, the software grouped the words that present similarity between them, classifying them into clusters. Thus, it grouped the 1,201 keywords into 13 clusters.

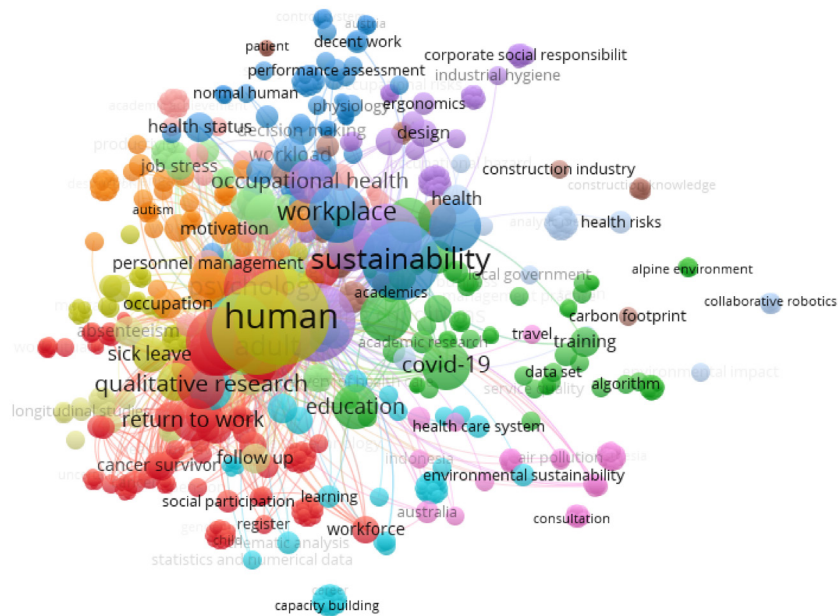


Figure 3. Analysis of the co-occurrence of keywords in the context of labor Sustainability

Source: Own research

Analyzing the 1,201 keywords found in the analysis study, we can see that the most used keywords were: Human (93), article (33), Sustainability (33), female (26), sustainable work (26), adult (25) and male (24). When analyzing the word cloud data, some terms similar to the Euro-found dimensions were identified, namely: physical workload, physical stress, working conditions, workforce, work situation, working time, decent work, work-life balance, employee satisfaction and occupational health.

The study analyzed the co-relationships of authors using VOSviewer software, which resulted in 477 authors, but only 29 of these authors showed co-relationships. These were divided into three groups based on their similarity, as shown in Figure 4, which is represented by three distinct colors.

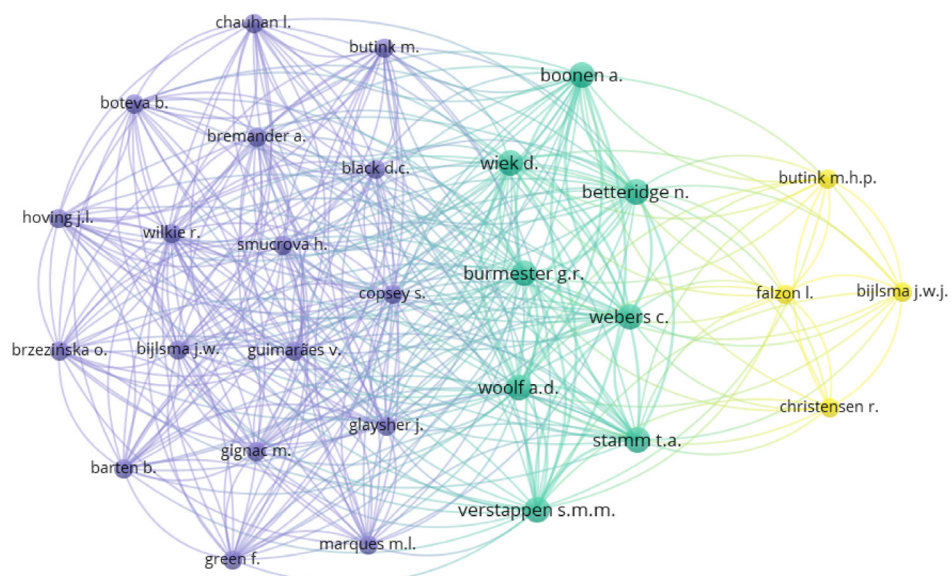


Figure 4. Authors' co-relationship analysis in the context of labor Sustainability

Source: Own research

Continuing the analysis of the co-relation between the authors, using the VOSviewer software, in the filtering process the option of non-co-relation between the authors was selected, to verify the “independence between the authors”. This resulted in the cloud shown in Figure 5.

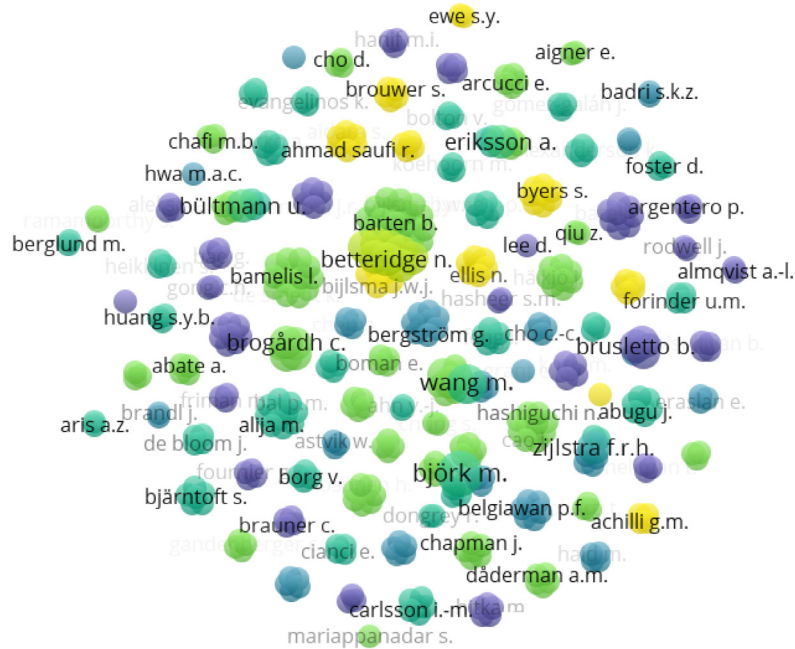


Figure 5. Analysis of authors’ co-relationship in the context of sustainability of work independently

Source: Own research

According to Figure 5, each niche or cloud characterizes the authors who have used the same term in the literature, due to the diversity of subjects that have been addressed on the sustainability of work, it is noted that many authors do not cite each other in the literature. Thus, we can conclude that the field of “sustainable work” is dispersed across different topics. Among the 243 publications selected for the systematic literature review, after filtering, a result of 113 journals was obtained for the respective analysis. The ten most cited studies are listed in Table 1.

Table 1. Top ten most cited journals from the systematic literature review

Titles	Authors and Year	Cited by	Alignment with Eurofound	Citation
Sustainable work performance: the roles of workplace violence and occupational stress	Rasool et al., 2020	85	Social Environment; Competencies and Description; Perspectives	(10)
Post-pandemic office work: Perceived challenges and opportunities for a sustainable work environment	Babapour Chafi et al., 2022	37	Physical environment; Social environment; Work intensity; Quality of working time; Skills and description	(3)
The impacts of COVID-19 on the environmental sustainability: a perspective from the Southeast Asian region	Praveena and Aris, 2021	34	Physical environment; Quality of working time; Earnings	(11)
Intention for car use reduction: Applying a stage-based model	Olsson et al., 2018	31	Physical environment; Quality of working time; Social environment	(12)

Unshrouding the sphere from the clouds: Towards a comprehensive conceptual framework for sustainable employability	Fleuren et al., 2020	29	Social environment; Physical environment	(13)
Employee motivation as a tool to achieve sustainability of business processes	Lorincová et al., 2019	29	Quality of working time; Intensity of work; Social environment	(14)
Health and work-life balance across types of work schedules: A latent class analysis	Brauner et al., 2019	26	Work intensity; Quality of working time; Social environment; Skills and description	(15)
Physical capacity, occupational physical demands, and relative physical strain of older employees in construction and healthcare	Merkus et al., 2019	26	Physical environment; Intensity of work; Quality of working time	(16)
The role of service providers' resilience in buffering the negative impact of customer incivility on service recovery performance	Sommovigo et al., 2019	25	Social environment; Work intensity; Quality of working time	(17)
Burnout among direct-care workers in nursing homes during the COVID-19 pandemic in Spain: A preventive and educational focus for sustainable workplaces	Martínez-López et al., 2021	24	Social environment; Work intensity; Physical environment; Work time quality; Skills and description; Perspectives	(18)

Source: Own research

The studies that received the highest number of citations in the literature and made significant contributions to the scientific community are presented in Table 1. These studies were examined and compared with the research carried out by Eurofound to identify which of the seven dimensions are present in the article under analysis.

According to Table 1, we can see that the dimensions of the Eurofound survey that were most cited were “Quality of Working Time” and “Social Environment”, both with eight occurrences. Next, the dimensions that were most cited were “Physical environment” and “Work intensity”, both with six occurrences. Next was the dimension “Skills and description”, with four occurrences, then the dimension “Perspectives”, with two occurrences, and finally “Gains” with one occurrence.

5. CONCLUSION

The study allowed the identification of gaps in the literature on the quality and sustainability of work, addressing several variables associated with the Eurofound dimensions, and comparing them with variables found in the systematic literature review, related to satisfaction, well-being and productivity in the context of remote work. The research has implications for organizational human resource management, contributing to HR managers' practices. Thus, the study suggests that employers should be aware of the importance of quality of work-life and work-life balance to achieve organizational and personal effectiveness. It is hoped that the present study will contribute to the well-being of society by helping to implement a work-life balance. However, the study opens space for further research in the area and sets the stage for future research on the topic.

Acknowledgment

This work was financially supported by the research unit on Governance, Competitiveness and Public Policy (UIDB/04058/2020)+(UIDP/04058/2020), funded by national funds through FCT - Fundação para a Ciência e a Tecnologia.

References

- Babapour Chafi, M., Hultberg, A., & Bozic Yams, N. (2022). Post-Pandemic Office Work: Perceived Challenges and Opportunities for a Sustainable Work Environment. *Sustainability*, *14*(1), 294. <https://doi.org/10.3390/su14010294>
- Bastos, L. B., Amorim, M., & Rodrigues, M. (2023). Understanding Workforce Sustainability and the Challenges of Digital Work. *Economic and Social Development: Book of Proceedings*, 384-392.
- Bharti, T., Ojha, S. C., & Tiwari, A. K. (2022). Interplay of Workplace Sustainability, Sustainable Work Performance, Optimism, and Resilience: The Moderating Role of Green Creativity in Luxury Hotels. *Sustainability*, *14*(22), 15097. <https://doi.org/10.3390/su142215097>
- Brauner, C., Wöhrmann, A. M., Frank, K., & Michel, A. (2019). Health and work-life balance across types of work schedules: A latent class analysis. *Applied Ergonomics*, *81*, 102906. <https://doi.org/10.1016/j.apergo.2019.102906>
- De Carlo, A., Girardi, D., Dal Corso, L., Arcucci, E., & Falco, A. (2022). Out of Sight, Out of Mind? A Longitudinal Investigation of Smart Working and Burnout in the Context of the Job Demands-Resources Model during the COVID-19 Pandemic. *Sustainability*, *14*(12), 7121. <https://doi.org/10.3390/su14127121>
- Eriksson, A., Dellve, L., Williamsson, A., & Skagert, K. (2022). How Conditions and Resources Connected to Digital Management Systems and Remote Work Are Associated with Sustainable Work. *International Journal of Environmental Research and Public Health*, *19*(23), 15731. <https://doi.org/10.3390/ijerph192315731>
- Fleuren, B. P. I., de Grip, A., Jansen, N. W. H., Kant, I., & Zijlstra, F. R. H. (2020). Unshrouding the Sphere from the Clouds: Towards a Comprehensive Conceptual Framework for Sustainable Employability. *Sustainability*, *12*(16), 6366. <https://doi.org/10.3390/su12166366>
- Kitchenham, B., Pearl Brereton, O., Budgen, D., Turner, M., Bailey, J., & Linkman, S. (2009). Systematic literature reviews in software engineering - A systematic literature review. *Information and Software Technology*, *51*(1), 7-15. <https://doi.org/10.1016/j.infsof.2008.09.009>
- Lorincová, S., Štarchoň, P., Weberová, D., Hitka, M., & Lipoldová, M. (2019). Employee Motivation as a Tool to Achieve Sustainability of Business Processes. *Sustainability*, *11*(13), 3509. <https://doi.org/10.3390/su11133509>
- Martínez-López, J. Á., Lázaro-Pérez, C., & Gómez-Galán, J. (2021). Burnout among Direct-Care Workers in Nursing Homes during the COVID-19 Pandemic in Spain: A Preventive and Educational Focus for Sustainable Workplaces. *Sustainability*, *13*(5), 2782. <https://doi.org/10.3390/su13052782>
- Merkus, S. L., Lunde, L.-K., Koch, M., Wærsted, M., Knardahl, S., & Veiersted, K. B. (2019). Physical capacity, occupational physical demands, and relative physical strain of older employees in construction and healthcare. *International Archives of Occupational and Environmental Health*, *92*(3), 295-307. <https://doi.org/10.1007/s00420-018-1377-5>
- Olsson, L. E., Huck, J., & Friman, M. (2018). Intention for Car Use Reduction: Applying a Stage-Based Model. *International Journal of Environmental Research and Public Health*, *15*(2), 216. <https://doi.org/10.3390/ijerph15020216>

- Praveena, S. M., & Aris, A. Z. (2021). The impacts of COVID-19 on the environmental sustainability: a perspective from the Southeast Asian region. *Environmental Science and Pollution Research*, 28(45), 63829-63836. <https://doi.org/10.1007/s11356-020-11774-0>
- Rasool, S. F., Wang, M., Zhang, Y., & Samma, M. (2020). Sustainable Work Performance: The Roles of Workplace Violence and Occupational Stress. *International Journal of Environmental Research and Public Health*, 17(3), 912. <https://doi.org/10.3390/ijerph17030912>
- Sadłowska-Wrzesińska, J., Piosik, K., & Nejman, Ż. (2022). Psychosocial Context of OSH-Remote Work of Academic Teachers in the Perspective of Sustainable Development. *International Journal of Environmental Research and Public Health*, 19(22), 14783. <https://doi.org/10.3390/ijerph192214783>
- Sommovigo, V., Setti, I., & Argentero, P. (2019). The Role of Service Providers' Resilience in Buffering the Negative Impact of Customer Incivility on Service Recovery Performance. *Sustainability*, 11(1), 285. <https://doi.org/10.3390/su11010285>
- Widar, L., Heiden, M., Boman, E., & Wiitavaara, B. (2022). How Is Telework Experienced in Academia? *Sustainability*, 14(10), 5745. <https://doi.org/10.3390/su14105745>
- Xie, L., Chen, Z., Wang, H., Zheng, C., & Jiang, J. (2020). Bibliometric and Visualized Analysis of Scientific Publications on Atlantoaxial Spine Surgery Based on Web of Science and VOSviewer. *World Neurosurgery*, 137, 435-442.e4. <https://doi.org/10.1016/j.wneu.2020.01.171>

