

## INTRODUCTION

# Managing physical and virtual work environments during the COVID-19 pandemic: improving employee well-being and achieving mutual gains

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### Abstract

Contemporary organisations continue to use flexible workspace configurations and increasingly are adopting more automated and intelligent digital systems to organise work. Workspace configurations have various forms and arrangements composed of the physical workspace (such as open-plan office spaces) and virtual workspace (e.g., teleworking). The aim of this Special Issue (SI) is to stimulate inquiry into the role of management, organisation and HRM in promoting mutual gains for employers and employees working in these environments. The essence of mutual gains is that HRM practices lead to greater employee well-being and increased employee performance, the latter being especially important to employers for achieving organisational goals. In ‘managing physical and virtual work environments during the Covid-19 pandemic’, we consider how work is organised in challenging physical and virtual workspace configurations as well as how people engage in activities that are paced and informed by automated and digital technologies. Our aim is to encourage exciting research on the role and implementation of management, organisation and HRM in physical and virtual workspace configurations, stimulate new scholarly discussions on the topic, and increase understanding of the application of new technology systems and tools. A specific objective of this SI is therefore to increase academic knowledge on the opportunities and challenges faced by employees working in different physical and virtual workspace conditions, and consider the consequences for employee well-being (Guest, 2017; Van De Voorde, Paauwe, & Van Veldhoven, 2012).

**Key words:** Physical workspaces; virtual workspaces; employee well-being; mutual gains; COVID-19; pandemic

In seeking to understand the role of management, organisation and HRM in physical and virtual workspace configurations, we should analyse employees’ experiences in relation to the specific context (Johns, 2006, 2010; Regoeczi, 2003). For example, evidence shows that different physical workspace configurations could have a greater influence on employees’ well-being and performance than was revealed in the original 1924–1932 Hawthorne studies (Ayoko, Ashkanasy, & Jehn, 2014; Kamoche & Maguire, 2011; Monaghan & Ayoko, 2019). Research also reveals that physical and virtual workspaces can inadvertently increase stress levels and negatively affect employees’ health and well-being (see Ashkanasy, Ayoko, & Jehn, 2014; Ayoko & Ashkanasy, 2020a, 2020b; Ayoko & Härtel, 2003; Ayoko, Ashkanasy, & Jehn, 2014; Brown, Lawrence, & Robinson, 2005; Elsbach, 2004; Elsbach & Pratt, 2007; Kim & de Dear, 2013; Redman et al. 2011). Yet, the importance of management and HRM systems and approaches is barely examined in these contexts. In fact, we have no real understanding of the role that management and HRM practices such as

performance management, information sharing, team working, employee development – or the combination of these – play in promoting mutual gains for organisations and employees across physical and virtual workspace configurations.

To address shortcomings in the literature, we argue that the theory and practice of management, organisation and HRM would benefit from a more in-depth analysis of the psychological (e.g., comfort and safety), social (e.g., privacy, surveillance, and monitoring) and organisational (e.g., continuous functioning) relationships occurring within physical and virtual workspaces. In general, we note an urgent need to better understand the types of management, organisational and HRM activities operating within these workspaces, as well as their impact on outcomes such as performance, employees' health and well-being.

Scholarly interest has surged on issues relating to sustainable management and organisation of human resources (Heikkurinen, Clegg, Pinnington, Nicolopoulou, & Alcaraz, 2021; Jo, Aryee, Hsiung, & Guest, 2020), and mutual gains processes for employees and their organisations (Guest, 1987, 2017; Ogbonnaya, 2019; Ogbonnaya & Messersmith, 2019; Peccei & Van de Voorde, 2019). However, Guest (2017) argues that most of the research has tended to concentrate on performance outcomes, with the consequences for employee well-being being relegated to the background. Thus, the underlying premise for mutual gains – that management, organisation and HRM should be advantageous to both individual employees and organisations – has not been explored extensively. Given this major gap in the literature, it becomes imperative for researchers to examine the roles and contribution of management, organisation and HRM models, theory, and research in physical and virtual workspaces, as well as the implications for employee well-being.

Published research on the impact of physical workspaces, such as open plan offices (OPO), reveals paradoxical consequences. OPO configurations are characterised by openness, flexibility, and few interior boundaries where there are no walls or partitions between employees at work. The main findings reported in some of the studies on OPOs are that they can be cost effective for organisations while facilitating social interactions (Kim & de Dear, 2013; Toker & Gray, 2008) and collaboration (Becker & Sims, 2001) among employees. In contrast, other OPO studies report negative findings. For example, employees' personalisation of their workspaces to affirm their distinctive identities and personalities, such as using hobby souvenirs, might be perceived negatively by colleagues (Elsbach, 2004; Elsbach & Pratt, 2007). Equally, research by Kim and de Dear (2013) found that OPO settings tend to be inundated by problems such as lack of privacy, noise, distractions, and territorial disputes (see also Monaghan and Ayoko, 2019) that most likely impact negatively employees' well-being.

Similarly, virtual workspaces are employed by organisations to achieve work flexibility, improve performance and productivity. As with physical workspaces, virtual workspaces are associated with mixed performance and well-being outcomes. Virtual workspaces are supported using complex information and communication technology (ICT) systems in the working environment (Bondarouk & Brewster, 2016). While virtual work may increase employee flexibility in ways that improve work-life balance (WLB) (see Aronsson and Göransson, 1999), given the growing use of artificial intelligence, robotics, and automated technological tools (Edwards, Charlwood, Guenole, & Marler, 2019), it is also possible for these technology-based work arrangements to facilitate insecure forms of employment such as temporary working and zero hours contracts. Further, these work arrangements could potentially increase employers' inclination towards small groups of highly skilled workers to the detriment of the general workforce (Guest, 2017). High levels of work flexibility may also induce work overload, loss of employee control, and increased job demands (Derks & Bakker, 2010) especially when working in environments characterised by ubiquitous electronic monitoring and surveillance activities (Abraham et al., 2019; Zweig & Scott, 2007). Without appropriate work design and supportive management, organisation and HRM policies or practices, virtual work environments can create negative outcomes for employee well-

being (Ashkanasy, Ayoko, & Jehn, 2014; Ayoko & Ashkanasy, 2020a, 2020b; Guest, 2017; Jo et al., 2020; Peccei & Van de Voorde, 2019; Zweig & Scott, 2007).

The pandemic has altered the occupancy and utilisation of public and private sector office space for most of 2020 and 2021. In the first few months of 2020, these office environments and routine locations suddenly became reserved solely for essential workers or at least only very reduced numbers of daily occupants. Due to changes in modes of employment, many organisations had already implemented flexible modes of working well before the onset of coronavirus disease-2019 (COVID-19), and so the abrupt change to remote working was not completely new for people who had previously engaged in flexible work arrangements. Indeed, change away from cellular planned office organisation towards OPO has been a gradual process since the 1950s, and during the last 20 years OPO itself has become modified by new management approaches emphasising flexible, non-territorial layouts, such as agile working and Activity Based Working (ABW).

In this SI, Nanyakkara, Wilkinson and Dulani examine through interviews and survey, recent changes to workspaces in a sample of large public and private sector Australian organisations that had implemented ABW office layouts during the period 2012–2019. In their mixed methods research paper, 'Influence of dynamic changes of workplace on organisational culture', the authors main aim was to assess how ABW influences organisational culture. Qualitative data were collected through 19 qualitative interviews of senior managers holding responsibilities for workplaces and HRM. The quantitative survey data were based on 32 participants whose organisations had implemented office layout changes during the same period. The purpose of ABW is to organise the workspace dynamically and interactively, according to where employees decide at the time is the optimal location for accomplishing their task activities rather than for the organisation to allocate office space on principles of status or group membership. From interviewees' perspectives, change to ABW supports several advantages such as projectised approaches, inter-departmental collaboration, employee control, reduced supervision, creativity, innovation, organisational commitment, work productivity, employee satisfaction, attraction/retainment of talented workers that can contribute to change in the organisational culture. The survey concentrated on culture change based on Cameron and Quinn's four cultures and the competing values framework (Cameron & Quinn, [1999], 2011). Changes to the office layout shifted the dominant cultures of market and hierarchy to cultures of clan and market, with increased saliency than before for adhocracy and reduced importance for hierarchy. Nanayakkara and colleagues conclude that these findings suggest that the managers in this study thought their organisations had changed to become more collaborative, flexible, adaptable, and knowledge-sharing environments.

In the transition towards more mixed forms of working from offices, home and other work sites and locations, organisations have some capability to influence both work and home environments. Sander, Marques, Birt, Stead and Baumann direct attention towards problems at work created by office noise, which has been found in previous studies on workspaces to impact on employee well-being. In their paper, 'Open-plan office noise is stressful: multimodal stress detection in a simulated work environment', they advocate change towards healthier and enabling workspaces than experienced in the past. Their study adopts a repeated measures experimental design where individuals work under two noise conditions simulating either open plan or private offices. While participants' cognitive performance was not compromised under the higher noise condition, their stress levels were higher, and affect was more negative. Acknowledging that office environments contain numerous stimuli (e.g., density, temperature, air flow, partitions, workstations, greenery, soft furnishings, natural light, occupants' movement, and communication), Sander and colleagues recommend that researchers and practitioners consider how future office environments can be modified to reduce noise distractions.

The flexible working away from standard office environments exaggerated by the pandemic in 2020–2021 has become normal practice especially for employees in services sectors. Routine access to necessary technological resources is critical in this context. Van Zoonen, Sivunen, Blomqvist, Olsson, Ropponen, Henttonen and Vartiainen in their paper, 'Understanding

stressor–strain relationships during the COVID-19 pandemic: the role of social support, adjustment to remote work, and work–life conflict’ reflects on the psychological strain experienced by employees during the pandemic. Especially, they focus on stressors and psychological strain in the context of remote working and, amongst other findings, note that hindrance stressors are more strongly negatively related to social support than challenge stressors. Moreover, hindrance stressors are found to be positively related to work-life conflict and are recommended to be actively managed by organisations. Additionally, individuals who are well-adjusted to remote working exhibit lower levels of psychological strain, and surprisingly with somewhat limited buffering effects of job control, work structuring and use of communication technology. Perhaps, some of these factors limited the efficacy in reducing psychological strain are related to the survey being conducted during an early stage of enforced remote working in May 2020. Even so, these results show the importance of sensitivity to individual differences in understanding and dealing with challenge and hindrance stressors, as well as highlight the potential benefits of organisations and managers engaging in activities of social support for employees that could reduce some elements of work-life conflict.

Gillett, Huyghebaert-Zouaghi, Austin, Fernet and Morin examine employees’ psychological well-being both inside and outside the context of work, collecting data on their self-reports of work engagement and family satisfaction. In their paper, ‘Remote Working: A Double-Edged Sword for Workers’ Personal and Professional Well-Being’, Gillett and colleagues report the results of a questionnaire survey of 432 respondents from two countries, the UK and US. Their sample consists of two groups of employees who were either working on-site ( $n = 152$ ) or remotely ( $n = 280$ ) and data show substantial differences between these two groups in relation to work engagement and four key research fields on work and family, namely: work-family conflict, family-work conflict, work-family enrichment, and family-work enrichment. Comparing and contrasting employees working on-site to those working remotely, results show some significant but positive effects of work centrality on work engagement for on-site but not for remote workers. In addition, the negative effects of work centrality on family satisfaction were stronger among the on-site group than remote workers. For those employees with low levels of work centrality, family satisfaction was higher among on-site than remote workers while employees with high levels of work centrality reported higher levels of family satisfaction in the remote working group. These results have important implications for employees in understanding work-family factors that influence their well-being and work performance especially in the context of the pandemic. Given that remote working presents specific coordination and communication challenges, there is also a need to train managers in best practices for managing employees operating in both on-site and remote work modes.

The Covid-19 pandemic has severely damaged the populations of numerous countries. Both its harsh impacts and more minor inconveniences have presented significant challenges and problems for employees specifically and for societies/communities in general. Increased uncertainties in daily living and work continually test individuals’ resilience and adaptability. Charoensap-Kelly, Sheldon, Antony and Provenzani assess the effects of employee resilience during an early stage of COVID-19’s impact in 2020 on countries situated in three continents. Their paper, ‘Resilience, well-being, and organizational outcomes of Croatia, Thai, and US workers during COVID-19’ assesses the changes in employee well-being, job productivity, and relational satisfaction at work precipitated by multiple disruptions to work and family routines. In this study of 832 employees in various industries, the capacity to adapt positively to adversity (i.e., resilience) is directly associated with their well-being and relational satisfaction. The effects of employee resilience on well-being and on relational satisfaction exhibited the same pattern across all three countries. There was also some evidence in the survey’s findings for a small, positive effect of resilience on productivity. This is consistent with a group of research studies conducted before the pandemic suggesting that positive psychological and performance outcomes are linked to employee resilience. Altogether, the authors remark that resilience, age, and country were

stronger predictors of well-being than others such as personality. Charoensap-Kelly and colleagues conclude that organisations should implement supportive policies and provide resources that sustain employee well-being.

The pandemic has bestowed high amounts of volatility, uncertainty, complexity, and ambiguity on most employers in affected countries. To that extent, it arguably has been a great leveller, in so far as all these organisations' managers now have accrued direct experience of (pandemic) crisis management. While the global repertoire of nations' responses to COVID-19 share major commonalities (lockdowns, social distancing, mask wearing, WFH, technology mediation, and vaccination programmes), their regulation and implementation have varied substantially and dynamically, and so has the virus's infection rates and its consequences for people's health and well-being. Yang, Tang, Chao and Li explore organisational resilience in a major retail supermarket in China during 2020. In 'Organizational Resilience in the Covid-19: A case study from China,' Yang and colleagues examine iterative and cyclical processes of resilience building and sustainable action, seeking to explain how this particular supermarket achieved comparatively high levels of resilience and business performance in the national retail industry in 2020. Their case analysis of historical and emerging resilience factors in the organisational heritage of the company distinctly reflects the national context of China's approach to government, industry, and employment regulation. The case company is reported as thriving in 2020 due to its positive and rapid response to industry upheaval caused by the pandemic prompting major changes to national retail industry norms and practices of customer service, supply chain management, use of technology and operations management. Yang and colleagues argue that rapid organisational change and company transition to new ways of working can be attributed to its instrumental and altruistic policies and practices. During this period, the senior management implemented instrumental strategies for more efficient and profitable operations to survive and grow. Middle and lower levels of management implemented strategic change by following procedures typical of the company's organisational culture and style of management. From a more altruistic perspective, the company effectively collaborated with government ministries in new ways of operating in the pandemic and invested in corporate social responsibility initiatives supportive of societal and community well-being.

Since the beginning of the COVID-19 pandemic in late 2019, a considerable amount of individual and organisational learning has happened on coping with periodic restrictions on movement, proximity, and social distancing in shared physical spaces. Equally, in organisations, individuals and teams have developed a colossal amount of experience of virtual work from home and other locations. In 'Forced flexibility and remote working: opportunities and challenges in the new normal', Franken, Bentley, Shafaei, Farr-Wharton, Onnis and Omar examine the rapid transition to remote work for a small group of 19 participating managers and employees from a work unit of a large corporation in the Australian resources industry. Their qualitative case study presents an insightful discussion of how the group adapted to the initial challenges and hindrances of WFH when not permitted to use the company's offices, commencing in April 2020. The authors' case narrative reports managerial and employee development of new skills and abilities in communicating effectively with colleagues; in ways that are more respectful of individual's specific work and family needs and situation. Consequently, after a period of difficulty with establishing new routines in managing workload, home and family life, the majority of the work unit's participants became more strongly committed to disciplines of work flexibility. This multiple mixed-methods research study (e.g., personal diary, interview, survey, critical incident technique) contains slightly different sample response sizes of participants all from the one work unit. The five themes identified in the case analysis—technology, WLB, the physical workspace, workload, and team relationships—recount over time achievement of higher levels of individual efficacy, well-being, and resilience, combined with increased work productivity. Even so, Franken and colleagues emphasise that a significant amount of the collected data shows from a Conservation of Resources theoretical perspective that individual accounts of substantial loss



spirals. Individuals told stories of loss of valued physical, psychological, and social resources due to enforced remote working, especially conditions in the early stage, involving seemingly unsurmountable challenges and serious hindrances. In terms of resource gains though, this work unit's improved in functionality because the group depends on greater exertion of interpersonal sensitivity to relationships, high supervisor and organisational support, team collaboration and reliable technology tools. In conclusion, these findings reveal how flexible workspaces are likely to become an important component of management and HRM policies that are designed to promote healthy, balanced, productive and satisfying working lives.

Education is one of several sectors that underwent in 2020 a rapid transition away from face-to-face to remote learning, most typically WFH. Traditionally, much of the day-to-day work had taken place in shared spaces within rooms and buildings designed to accommodate activities of teaching and learning. 'The impact of institutional support on educators' subjective well-being during transition to virtual work due to COVID-19 lockdown' by Kumpikaitė-Valiūnienė, Duobienė, Liubiniene, Kasperiūnienė, and Tandzegolskienė investigates the case of the Education sector in Lithuania, which in March 2020 changed to virtual learning and remote working with staff and students no longer meeting in physical space until the summer. Globally, majority of learning institutions appear unprepared for virtual working and learning keeping in mind that at the peak of the crisis in 2020 around 1.6 billion students in 195 countries were not allowed to attend school, college and university-built environments (UN-Policy Brief on Covid- 19, 2020). Moreover, in 2020, when teachers and students suddenly were required to work from home, most appear to possess comparatively limited technology tools for 24/7 virtual learning environments. Kumpikaitė-Valiūnienė and colleagues examine at the impact of institutional (organisational) support on well-being, adopting measures from the WHO well-being index, a version of the Copenhagen burnout inventory (personal, work-related, and client-related burnout), and a WLB instrument. Data based on 1,851 respondents confirmed the direct effects of support, WLB, burnout (negative relationships) on well-being. Also, there were indirect effects on well-being mediated by WLB and personal, work-related and client-related burnout suggesting that institutional support during the transition from direct to virtual teaching and learning had a positive impact in Lithuania on academics and teachers' well-being. Moreover, the first phase of transition to virtual learning due to COVID-19 restrictions in April–May 2020 was detrimental to WLB. The authors recommend that education institutions should ensure high provision of support for teachers especially during crisis events. Consistent with job-demands resources and organisational support theories, they argue that such support should be sustained and periodically evaluated within the Education sector. This encompasses a range of areas including technology resources, technical support, teaching and learning guidance, training and development, management, and administration. The provision of sufficient resources and support has a positive impact on teachers' WLB and well-being.

In our next paper and from the perspective of senior managers employed in public sector Education organisations, Dandalt explores the pandemic crisis management activities of 41 managers required to work from home. Dandalt's research study titled, 'Managers and telework in public sector organisations during a crisis' was conducted in Canada during a similar period of quarantine (April–June 2020) to many other countries. Dandalt argues that participants' accounts of their management activities during this time are characterised by a reconsideration of roles and increased appreciation of the contribution of telework to teaching and learning. Participants felt that teachers were looking for more psychological support from their managers in dealing with their tasks and workloads than they were before the pandemic. Analysis of the interview data generated two categorical themes, work-related organisational challenges, and intangible benefits of telework. Within these two categories, interrelated issues arising from the narrative, contingency analysis include work-related challenges of organisational empathy, managerial supervision, and redundant communication, and for telework, benefits for talent management, hybrid work aspirations and more WLB. Additionally, participants expected that WFH

would become the norm with most teachers working remotely in future for about half of the week or slightly less. Moreover, some HRM policies and practices were considered likely to become more efficiently implemented through digital technologies, particularly in areas such as selection and recruitment. Based on personal awareness and skill development in practices of teleworking during the pandemic, this small sample of managers from the Education sector have become more capable of leading-by-example, managing, administrating, and supervising through digital technology tools. The managers also appeared more enthusiastic than before about the long-term advantages of hybrid work arrangements in the public sector. Similarly, they became more accommodating in their attitude to WLB and especially towards the notion of WFH through telework to support improved family socialisation for teachers and managers. As Dandalt concludes, while this group of senior managers aspire towards greater public sector access to hybrid-work arrangements in the future, their aspirations are still set predominantly within the context of commitment to standard work norms rather than fundamental adoption of non-standard work arrangements.

In the final paper, Ayoko, Caputo and Mendy identify some of the areas of theoretical and practical significance for future research on management and organisation. In 'Management research contributions to the Covid-19: A bibliometric literature review and analysis of the contributions from the Journal of Management & Organization,' the aim is to understand how the COVID-19 crisis and its long-term effects will be managed. Their review is based on influential publications from the *Journal of Management and Organisation* over the period 1995–June 2020. Based on analysis of key words, Ayoko and colleagues' study identifies six clusters: (1) conservation of resources theory, entrepreneurs, gender, and work–family conflict; (2) corporate governance, corporate social responsibility and stakeholder salience; (3) family firms, innovation and research methods; (4) creativity, leadership and organisational change; (5) job satisfaction and psychological empowerment; and (6) team performance. It is important to note though that their paper is not seeking to make causal links between influential publications and the actual management of organisations before, during and after the COVID-19 health crisis. Rather, their intention is to assess the extent that existing research to-date can inform our knowledge and understanding of the effective management of virtual work, work–family conflict, technology, workspaces, and employee well-being and especially in a covid-19 crisis. Ayoko and her colleagues present a wide-ranging research agenda for dealing with changes in patterns of work organisation and management that have been precipitated by government, organisational and individual responses to COVID-19. They recommend that researchers and practitioners reflect carefully on what forms of social and technological changes will continue to develop in physical and virtual workspaces. What patterns will emerge in hybrid work, flexible working, WFH, technology mediation and varied forms and styles of social interaction, are some of the questions they raise.

As previously noted, our aim in this SI is to encourage exciting research on the role and implementation of management, organisation and HRM in physical and virtual workspace configurations, stimulate new scholarly discussions on the topic, and increase understanding of the application of new technology systems and tools. We also aim to increase academic knowledge on the opportunities and challenges faced by employees working in different physical and virtual workspace conditions and consider the consequences for employee well-being. The ten articles presented in this SI demonstrate that academic researchers have explored a number of theoretical and practical implications of physical and virtual work environments for achieving mutual gains and especially in the context of the COVID-19 pandemic between 2020–2021. In this respect, one important outcome of the pandemic (among others) is that it has directly encouraged scholars to address the paucity of research conducted on these workspaces and consider the role of management and HRM in alleviating stress and improving employees' health, well-being, and work performance.

More importantly, in the selection of papers for this SI, mutual gains from the specific perspective of employee performance are illuminated in different ways. For example, Nanayakkara

and colleagues' report a more dominant clan culture emerged in the ABW given the changes in ABW configurations. The extent that cultural change has shifted (e.g., regressed, persisted, or accelerated) during COVID-19 is an important area for further research from employees' and employers' perspectives. Similarly, the results from Sander and colleagues' paper suggest that HR practitioners should give more careful attention to the multi-modal dimensions of office noise. Clearly, future research is essential to illuminate how office noise influences employee well-being and performance in varieties of physical and virtual workspaces and how such workspaces can bring about the much-needed mutual gains for employees and employers.

Also, given the results from Van Zoonen and colleagues, we now know that many of the hindrance stressors on employees are under a fair amount of control by organisations, and hence some of the problems can be ameliorated. We are also aware that many employees have encountered increased challenge stressors during the COVID-19 crisis that may affect wellbeing negatively. This means that supervisors should become more skilled in communicating positively and productively with employees on issues such as work-life conflict and remote working. More research is needed on how productive communication can facilitate mutual gains for organisations in work environments generally and in the physical and virtual workspaces specifically.

One of the interesting results in this SI is that work centrality is associated with higher levels of work-family conflict, work-family enrichment, and family work-conflict, as well as with lower levels of family-work enrichment. We also know that there are significant direct and indirect effects of work centrality that were more pronounced among onsite workers than remote workers. This suggests that managers should be sensitive to the challenges of onsite and remote work modes while understanding individual differences in work centrality amongst employees. Moreover, management action based on greater awareness of where and how individual differences in personality and national culture are more likely to impact on individual resilience levels and behaviours is recommended. Future research should extend the work of Gillett, Charoensap-Kelly and their colleagues in this area to provide more guidelines on the different ways in which managers might be able to manage both onsite and virtual employees differently while promoting efficiency and resilience.

Yang and associates in this SI identify the possible role of altruism rather than self-interested behaviour as a characteristic of organisational resilience in the Chinese context. They suggest that their case company's growth was due to innovative management of supply, distribution chains, accelerated use of digital tools, adaptive team management and incentivising of the large number of employees in warehouse operations and store services provision. Similarly, the case studied by Franken and associates reveal the process of transitioning from office to remote teams and the impact of this on productivity/work life balance. The nexus between remote work (or WFH) and productivity is complex and not fully understood. These findings should be replicated in other cultural contexts and with the aim of achieving mutual gains for organisations in other new cultural contexts.

Along the same lines, more longitudinal studies of COVID-19 are required to follow up the work of Kumpikaitė-Valiūnienė and colleagues in the education sector. More specially, studies are needed in hybrid delivery mode (i.e., combined face-to face physical buildings and virtual delivery modes) and its impact on education providers and students' learning outcomes. Additionally, Dandalt's research reveals the accelerated pace of change towards increased individual and collective competencies in digital technology supported methods of learning, communication, and educational management. More research into the specific role of digital transformation, AI, and Robotics as employees and employers attempt to achieve mutual gains while working in both physical and virtual environments is urgently warranted. Finally, the article by Ayoko and her colleagues is a first step to what researchers and practitioners may learn from existing research and practice in organisational crisis management. More scholarly work is needed to illuminate and understand the intersection of leadership, HRM, WFH, virtual technology and the physical environments of work.



In conclusion, while this SI has presented articles that investigate the connection between physical and virtual work environments and achieving mutual gains, much more work is ahead. Research in this area should continue to interrogate how mutual gains can be achieved while working in both physical and virtual workspaces. In this respect, more studies are needed to identify the most worthwhile multilevel perspectives and conceptualisations of the connections between the physical and virtual workspaces, HRM, employee well-being and the relationship between HR support systems and employees' well-being (emotional and psychological) in physical and/or virtual office environments. Research is also warranted to outline the intervening role of HRM practices on the connection between the features of the physical environment of work (i.e., lack of privacy, noise) and employee health and well-being and how the design of physical and/or virtual work spaces (e.g., aesthetic and architectural design of buildings and offices, spatial layouts, inclusion of social or activity spaces) can be used to support HRM practices such as recruitment, motivation, learning, development, retention and organisational culture change. Also, studies are needed to unearth the theories and methodologies for studying the connections between physical and virtual workspaces, employee well-being, HRM practices and achieving mutual gains.

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