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Pedro M. Arezes · J. Santos Baptista · Rui B. Melo · Jacqueline Castelo Branco · Paula Carneiro · Ana Colim · Nélson Costa · Susana Costa · J. Duarte · J. C. Guedes · Gonçalo Perestrelo *Editors*

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Team Leaders' Strategies and Employees' Professional Isolation, Burnout, and Performance During COVID19

Eva Dias-Oliveira, Filipa Sobral, Catarina Morais, A. R. Gomes, and Clara Simães

Abstract Telework has progressively increased in the past decades, providing organizations and, consequently, leaders, with new challenges. The COVID19 pandemic not only doubled the number of teleworkers, but reinforced these challenges, by forcing some organizations and employees to abruptly adapt to this new reality. In this manuscript, we aimed to explore the role of the strategies implemented by leaders to manage their teams in employees' sense of professional isolation, burnout, and perceived performance. Thus, data was collected from 1149 teleworkers during the COVID19 pandemic, who answered an online questionnaire. At that time, 79% were working exclusively from home, and 91% had never had a previous experience of working remotely. The results showed that the strategies implemented by leaders to manage their teams contributed to reduce employees' sense of professional isolation which, in turn, is associated with lower feelings of burnout and higher perceptions of performance. The study reinforced the role of leadership in the context of teleworking and, specifically, the importance of leaders being attentive to team members' specific needs in order to help improving their wellbeing.

Keywords Leadership · Virtual teams · Telework · Wellbeing

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1 Introduction

In March 2020, the Word Health Organization (WHO) recognized the existence of a global pandemic caused by the SARS-COV-2 virus, commonly known as the COVID-19 pandemic. Given these circumstances, and to reduce the spread of the virus, Governments around the world decree mandatory confinements, which restricted the mobility of citizens, enforced the use of a facial mask, and demanded physical distance between individuals of different households (Cheng et al. 2020). Consequently, the work processes changed abruptly and unexpectedly, namely by the massive adoption of telework. If before the COVID-19 statistics already pointed to an increasing number of teleworkers around the world, after the pandemic announcement this indicator more than doubled (Eurostat 2021). In 2019, approximately 5.5% of EU workers aged from 20 to 64 years-old worked from home, whereas in 2020 this number increased, on average, to 12.4%. It is also worth noting that, in 2020, the urban areas and the capital regions of Germany, Luxembourg, the Netherlands and Portugal the teleworkers represented one fifth of the workforce (Eurostat 2021).

Telework is defined by the International Labour Office (ILO) as a regime where the information and communications technologies (ICTs) allow employees to regularly perform their work remotely, either from their home or from any other location, outside the company's site (ILO 2021). Also, telework environment presupposes the existence of adequate ICT tools and favourable physical conditions, for example, avoiding distractions and maintaining silence (Carillo et al. 2021). However, these conditions where not guaranteed during the multiple COVID-19 locked downs: in 24 h, individuals were required to work from home responding remotely to work demands and face-to-face to personal or family duties. Home become the place where all daily activities were done—being, at the same time, the space for work, leisure, family, and occasionally, an improvised school for remote classes (Pennington 2021; Uddin 2021).

The COVID-19 crisis has provoked a serious blow to the lives of people all over the world, impairing several areas of their daily lives and jeopardising their wellbeing. It is, therefore, urgent to provide recommendations which can contribute to the improvement of individuals' mental health (WHO 2020). Specifically, companies were challenged to find strategies adapted to a "new" reality and capable of maintaining positive levels of wellbeing and performance among their employees following the United Nations Sustainable Development Goals (SDG) (United Nations 2020). In doing so, companies can mitigate the consequences of COVID-19 on the work relation and directly contribute to the achievement of SDG 3 (i.e., socio occupational health and wellbeing) and SGD 8 (i.e., employment, decent work and social protection for all). Thus, this study aims to provide empirical evidence on the relationship between supportive work environment and teleworkers wellbeing in a context of crisis.

From the employees' point of view, telework can be perceived as either a positive or negative experience. Some scholars suggested that this work regime is associated with increasing flexibility, autonomy, and productivity which might contribute to a better wellbeing (Ter Hoeven and Van Zoonen 2015). On the other hand, others

see telework as having the potential to produce the opposite effect in the COVID-19 context, and professional isolation is pointed out as the most influential factor regarding work adjustment for individuals working remotely (Carillo et al. 2021). Professionally isolated workers are those who feel that their networks of social relations are insufficient (Kutoane et al. 2021). The result is an unpleasant work experience as individuals hold the believe that they are unconnected with others and for that matter are not able to influence their working context (Golden et al. 2008). Indeed, telework can facilitate the feeling of professional isolation since workers lack social comparison with a significant group. Hence, they have more difficulty to determine how they should respond to work events (Golden et al. 2008). Literature suggests that specific remote working conditions might worsen the feeling of professional isolation in teleworkers (cf. Golden et al. 2008). For example, having no opportunity to choose working remotely, working from home in a full-time basis, being sent home indefinitely and no opportunities for face-to-face interactions. All these conditions were felt during the COVID-19 pandemic. Therefore, there are reasons to believe that during this period a widespread feeling of professional isolation was felt amongst teleworkers.

The access and effective use of ICTs can be seen as an advantage for teleworkers since they can stay connected with colleagues which reduces feelings of isolation for those who are working remotely (Lal and Dwivedi 2009; Sewell and Taskin 2015). However, this vision carries the risk of constraining workers into a situation where they must be constantly visible to their workplace (Sewell and Taskin 2015). Previous research (Charalampous et al. 2018) suggest that the available technology, which allows teleworkers the use of multiple communication channels, increases the intensity of their work activities, the constant work interruptions (e.g., incoming emails or instant messages), and the temptation to continue working beyond working hours. In the end, the pressure to be always "online"—whether to work or to socially interact with colleagues—makes it harder to disconnect physically and mentally from work and to recover between workdays, with consequences on teleworkers ill-being (Molino et al. 2020). Telework, seems to increase levels of stress and exhaustion (Toscano and Zappalà 2020).

Maslach (1976) described burnout as a state of worker exhaustion which refers to a lack of emotional resources to perform their tasks. In this case, the workers detach themselves from others and work, i.e., their feelings about people shift towards cynical and they poorly deliver their work. Currently, burnout is one of the most important work-related psychosocial threats. It is felt among distinct types of professions and occupational groups with significant costs for both individuals, organizations, and society at large (Edú-Valsania et al. 2022; Epstein et al. 2020; Medina et al. 2021). The negative impact of burnout on distinct realms of human life justified the World Health Organization (WHO) to include this syndrome in the 11th Revision of the International Classification of Diseases (ICD-11; WHO 2019).

In order to mitigate both teleworkers professional isolation and burnout levels, companies should promote a positive adaptation to the new work regime, namely by helping employees on building better personal resources and fostering their motivation on task performance (Chen and Eyoun 2021). Whereas, in telework,

workers are physically dispersed, leaders might play a crucial role in the maintenance of team's positive outcomes. Previous research, carried out in face-to-face work context, suggests that leaders can shape employees' work experience and organization environment (Inceoglu et al. 2018; Kelloway and Barling 2010; Nielsen and Taris 2019). For instance, leaders support was found to play an important role on decreasing workers' social isolation feelings (Charalampous et al. 2018) and on burnout (Tafvelin et al. 2019). However, working from home brings news challenges to the leader's effectiveness that should be addressed.

Lyons and colleagues (2009) discussed the specific needs of the virtual team leader by presenting a set of strategies which can support leadership functions in that context. In the management of virtual teams, collaborative technology effective communication and proximity between the leader and the team emerges as a critical strategy to foster team's success. For example, Lyons and colleagues (2009) suggest that miscommunications can be mitigated when the leader of virtual teams clarifies and establishes procedures, expectations, individual's areas of expertise and interdependency and sets challenging, but attainable, goals. They also suggest that when team leaders provide regular updates and constructive feedback regarding team member's progress, they manage to create a close relationship using collaborative technology. In doing so, the leader can identify emerging performance problems and act upon them and in the end, reward and recognize the effort of each of the team members (Lyons et al. 2009). Altogether these strategies seem to provide clues on how the support of a leader, whose team is virtually connected, could predict positive team members' outcomes, namely their wellbeing. However, this relationship has never been empirically tested. So, the first hypothesis of this study aims to address this gap.

Hypothesis 1 A positive perception of the strategies implemented by leaders to manage teleworking teams predicts lower levels of professional isolation and burnout.

Recognizing that high employee professional isolation and burnout are costly for both organizations and individuals, its consequents request more research attention (Chen and Kao 2012). Studies before COVID-19 pointed out that workers' well-being can predict performance and performance quality (Peiró et al. 2019). For example, Taris and Schaufeli (2018) discuss under the effort-recovery theory the effects of workers un-well-being (i.e., fatigue) on performance. In fact, fatigued workers may lower their performance since they may choose to perform sub optimally or fulfil only part of their task. The same can be true for teleworkers whose well-being is affected by feelings of professional isolation and burnout. Indeed, previous studies have already shown the damaging effects of professional isolation on performance when evaluated by teleworker's supervisors (Golden et al. 2008). This relationship was also established in telework pandemic context (Toscano and Zappalà 2020). The direct negative influence of social isolation on workers' perceptions of productivity was also confirmed. This result underlines the importance of social relationships and that the experience of loneliness is strongly related to the subjective perception of productivity. The role of burnout as a negative predictor of productivity was also explored, particularly, in non-telework settings. Indeed, burnout leads to lower

productivity and effectiveness, and work disruption (Greenglass et al. 2001). As previously stated, the unique features of teleworking in the pandemic COVID-19 context may decrease employee's wellbeing. In line of the previous literature, it could be argued that workers' ill-being is related to performance difficulties. In fact, Mihalca and colleagues (2021) discuss how teleworkers stress during COVID-19 affects their productivity and performance. In brief, performance is a consequent of wellbeing but other constructs, such as the leader support, can also play a role on influencing workers performance.

Research suggests that leaders who support individuals to achieve their work goals contribute to not only to employees' well-being, but also to improve their performance (Chen and Kao 2012; Inceoglu et al. 2018; Kelloway and Barling 2010; Nielsen and Taris 2019). Thus, the support from leaders can have a direct effect on performance, but also have an indirect effect through well-being. These direct and indirect effects have been established in the face-to-face working regime; however, it deserves to be further researched in the teleworking context. So, in the second hypothesis of this study wellbeing is proposed as a mediator between the supportive role of the leader and the teleworkers performance:

Hypothesis 2 Professional isolation and burnout mediate the positive relationship between the strategies implemented by leaders to manage teleworking teams and the team members' perceived performance.

2 Materials and Methods

2.1 Participants and Procedure

Data was collected using a self-report questionnaire and disseminated using a Qualtrics® link. The questionnaire was spread between November of 2020 and April of 2021 using several online platforms (e.g., LinkedIn, Facebook Groups) and several protocols with different organizations were established. These organizations belonged to a wide range of sectors (e.g., Education, Public Administration, Financial, among others). In the case of data collected in specific organizations, participation was still anonymous and confidential, but the organization received a report with the overall results of their employees—participants were informed of this arrangement before answering the questionnaire. After reading the informed consent, participants completed demographic information, and provided their perceptions regarding the leadership strategies implemented by their managers to facilitate their remote work, their feelings of professional isolation and burnout, as well as their perceptions regarding their performance in remote work.

An initial sample of 1195 employees were collected. However, 46 participants were removed from the dataset because they were not working remotely (neither partially nor full-time) or were unemployed and, therefore, did not meet the inclusion

criteria. Thus, a final sample of 1149 workers were considered. Participants were mainly females (71%), married (62%, 27% single and 11% divorced), completed a higher education degree (81%, 15% completed high school), and aged between 21 and 69 years-old ($M = 44.63$, SD = 10.05). They are from the Education sector (59%), Public Administration (24%), Financial (7%), Consultancy (3%), Information and Communication (2%), and Administrative Services (2%). At the time of data collection, 79% of participants were working exclusively from home and 21% were engaged in a hybrid regime (but working remotely most of the weekdays). Most participants had never had a previous experience of working remotely neither in the organization they were working at that time (95%) not in a previous employment (91%).

2.2 Measures

2.2.1 Team Leaders' Strategies

Lyons and colleagues (2009) proposed 10 strategies that enable team leaders' to successfully manage their virtual teams. Participants were asked to rate their agreement (*1 = completely disagree, 5 = completely agree*) regarding on whether those strategies (e.g., "My leader fosters a team mentality; set goals that require teamwork"; 10 items) were implemented by their leaders. A Confirmatory-Factor Analysis revealed good psychometric properties for the unidimensional structure of 10 items: χ^2 (31 *df*) = 121.394, χ^2/df = 3.916, RMSEA = 0.054, 95% CI [0.044, 0.064], *p* (RMSEA $\leq$ 0.05) = 0.250, SRMR = 0.021, CFI = 0.986, *p*CFI = 0.679, GFI = 0.976, *p*GFI = 0.550; TLI = 0.979. Therefore, a global score was computed based on the average of their responses ($\alpha = 0.91$ for this study).

2.2.2 Professional Isolation

Participants perceptions regarding professional isolation were assessed using a 7-item measure developed by Golden and colleagues (2008). For each statement, participants rated how frequently (*1 = never, 5 = always*) they felt that way (e.g., I feel lack of social connection with my co-workers). A Confirmatory-Factor Analysis revealed good psychometric properties for the unidimensional structure of 7 items: χ^2 (11 *df*) = 48.368, χ^2/df = 4.397, RMSEA = 0.055, 95% CI [0.040, 0.071], *p* (RMSEA $\leq$ 0.05) = 0.276, SRMR = 0.024, CFI = 0.986, *p*CFI = 0.516, GFI = 0.987, *p*GFI = 0.388; TLI = 0.973. The average of their responses was calculated to form a single professional isolation score ($\alpha = 0.83$ for this study).

2.2.3 Burnout

An adaptation of the Maslach Burnout Inventory (Maslach & Jackson, 1981) was used to evaluated participants' perceptions of job burnout. For each of the ten statements (e.g., I feel emotionally drained from my work), they rated how frequently they felt that way (*1 = never, 5 = always*). A Confirmatory-Factor Analysis revealed adequate psychometric properties for the unidimensional structure of 10 items: $\chi^2(31\ df) = 258.324$, $\chi^2/df = 8.333$, RMSEA = 0.081, 95% CI [0.072, 0.090], p (RMSEA $\leq$ 0.05) < 0.001, SRMR = 0.066, CFI = 0.957, pCFI = 0.659, GFI = 0.955, pGFI = 0.539; TLI = 0.938. Thus, a total score of Burnout was computed by averaging their responses ($\alpha = 0.87$ for this study).

2.2.4 Perceived Performance

Participants' perceptions of their performance while working remotely were assessed using the "Productivity" dimensions of the E-Work Life Scale (Grant et al., 2018). Thus, participants rated their agreement (*1 = completely disagree, 5 = completely agree*) with four statements (e.g., "E-working makes me more effective to deliver against my key objectives and deliverables"). A Confirmatory-Factor Analysis revealed adequate psychometric properties for the unidimensional structure of 4 items: χ^2 (1 df) = 3.505, $\chi^2/df = 3.505$, RMSEA = 0.047, 95% CI [0.000, 0.104], p (RMSEA $\leq$ 0.05) = 0.429, SRMR = 0.008, CFI = 0.998, pCFI = 0.166, GFI = 0.998, pGFI = 0.100; TLI = 0.990. A total score of perceived performance was calculated based on the average of their responses ($\alpha = 0.81$ for this study).

3 Results

3.1 Preliminary Data Analysis

The first step consisted of checking the normality assumptions using the values of skewness [−3, 3] and kurtosis [−10, 10] (cf. Kline 2011). Both skewness [−0.52, 0.34] and kurtosis [−0.49, 0.69] were within the criteria values established by Kline (2011), concluding that no severe deviations from normality were found (−0.52 > sk < 0.34; −0.49 > ku < 0.69) and, therefore, path analysis could be conducted to test the sequential mediation hypothesis.

3.2 *Path Analysis Results: Relationship Between Team Leaders' Strategies, Professional Isolation, Burnout, and Performance*

The path analysis results showed that the proposed model (cf. Fig. 1) is an excellent fit to the data: χ^2 (1) = 0.927, χ^2/df = 0.927, RMSEA < 0.001, 95% CI [0.000, 0.077], p(RMSEA ≤ 0.05) = 0.772, SRMR = 0.008, CFI = 1.00, pCFI = 0.167, GFI = 1.00, pGFI = 0.100, AIC = 18.927, BCC = 19.006, MECVI = 0.017. The results of all direct and indirect (mediation) effects summarized on Table 1. A careful analysis of the direct paths shows that a more positive perception regarding the strategies implemented by leaders, leads to a lower sense of employees' professional isolation and burnout. Additionally, higher perceptions of professional isolation also predicted perceptions of burnout and both professional isolation and burnout negatively predict employees' perceived performance. Regarding the indirect effects, all mediations are significant. This means that professional isolation mediated the relationship between leadership strategies and burnout, and between leadership strategies and perceived performance. Similarly, burnout mediated the relationship between leadership strategies and perceived performance. Furthermore, the sequential mediation proposed in this study was also significant, as both professional isolation and burnout mediate the relationship between leadership strategies and perceived performance.

In sum, and as expected, the strategies team leaders implemented have direct effects in lower levels of professional isolation and burnout (H1), but also an indirect effect on employees' perceived performance. Specifically, the notion that leaders implemented a series of strategies to help employees cope with working during the pandemic helped to decrease their sense of professional isolation which, in turn, contributed to lower levels of burnout and, consequently, to a higher perception of performance (cf. Fig. 1), supporting H2.

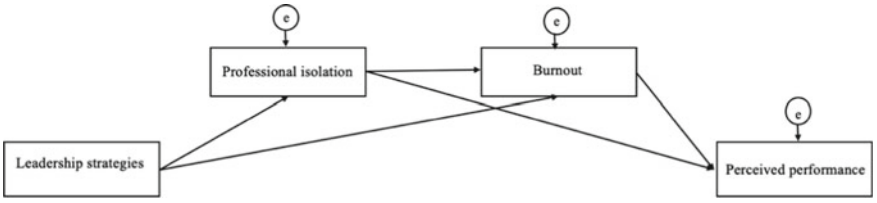

Fig. 1 Proposed model tested using path analysis

Table 1 Parameters' estimates of the proposed model

	b	SE	*p*	β
Direct effects				
Team Leaders' strategies → Professional isolation (H1)	−0.295	0.030	< 0.001	−0.280
Team Leaders' strategies → Burnout (H1)	−0.164	0.023	< 0.001	−0.172
Professional isolation → Burnout	0.485	0.022	< 0.001	0.535
Professional isolation → Performance	−0.211	0.031	< 0.001	−0.225
Burnout → Performance	−0.208	0.028	< 0.001	−0.244
Indirect effects				
Team Leaders' strategies → Burnout (via professional isolation)	−0.143	0.018	0.011	
Team Leaders' strategies → Performance (via professional isolation)	0.061	0.011	0.004	
Team Leaders' strategies → Performance (via burnout)	0.035	0.008	0.019	
Team Leaders' strategies → Performance (via professional isolation and burnout) (H2)	0.030	0.006	0.008	

4 Discussion

Research on leadership support has already shown that leaders play a crucial role in shaping the workers' wellbeing and performance in face-to-face work contexts (e.g., Avolio et al. 2009). The present study contributes to the literature on leadership since it addresses how specific strategies on managing teleworkers can be effective in predicting the wellbeing and performance of workers. The focuses on employee's wellbeing as a direct outcome has been neglected in favor of employees' performance and, when considered, wellbeing is seldom used as a multidimensional concept (Inceoglu et al. 2018). Thus, another merit of this research is to approach wellbeing as a multidimensional construct. Following Van Horn and colleagues (2004), two of the dimensions of wellbeing were considered: the social dimension, which concerns the social relationships at work (i.e., professional isolation); and the affective dimension, which comprises emotional exhaustion (i.e., burnout). Finally, it also contributes to the literature of teleworking during COVID-19 since data was collected during the pandemic lockdowns.

The relationship between leaders' strategies in managing virtual teams and teleworkers' wellbeing was the first to be examined. Results fully supported H1. The confirmation of this hypothesis emphasizes the importance of adapting leaders' strategies to teleworking teams (Lyons et al. 2009). This seems particularly relevant when the teleworking context emerges from a global crisis, as the COVID-19 pandemic (Carillo et al. 2021; Cheng et al. 2020). Thus, as facing a rapid transformation in the work regime, leaders had to change their team coordination strategies without any preparation. Even with little preparation for the telework context, leaders

who were able to manage their virtual teams by implementing strategies such as effective communication (i.e., defining expectations and establishing procedures and goals) and a close relationship (i.e., provide regular updates and constructive feedback) contributed to foster their team members' wellbeing (i.e., reduce the feeling associated with professional isolation and burnout). In the same vein, Contreras and colleague (2020) argue that when managing teleworking teams, leaders need to pay special attention to the way they communicate, interact, and give feedback. This is even more relevant when organizations are facing turbulent periods. In such context, organizations rely mostly on a top-down communication and, consequently, leaders can have information that is not available to their subordinates unless they share it with them (Günther et al. 2022). The combination of both, a sudden change in work regime (from face-to-face to teleworking) and a pandemic crisis, might create a perfect storm in the management of teams. Indeed, there is a lot of new procedures in place to which teams need to adapt and comply, and the manager has possibly become the only link between workers and organisation, during this period. As a result, if failing to implement strategies that increase a positive work atmosphere, where teleworkers feel connected and involved with their team, leaders may fail to prevent teleworkers illbeing and contribute to feelings of isolation among team members (Contreras et al. 2020).

Further, the leaders' strategies and wellbeing were also examined as an antecedent of teleworkers perceived performance. More specifically, since perceived wellbeing reflects the effect of individuals' emotional disposition in mental health (Quoidback et al. 2010), it was considered as a possible mediator between leader strategies and teleworkers performance. The results fully supported H2 as leader strategies had a stronger effect on work performance when mediated by employee lower levels of professional isolation and burnout. Individuals who feel simultaneously less distant from their work environment and less exhausted, even if working remotely, take more advantage of the leader's strategies, revealing higher perceptions of work performance. Regarding the direct link between leadership and wellbeing our results are in line with previous literature on the topic. For example, Chang and colleagues (2011) qualitative study on virtual teams suggest that when team's leaders can adequate the strategies to the virtual setting (e.g., spend more time with their team and communicate more frequently) their teams tend to achieve better performance. Nevertheless, the result of the current study goes beyond this direct relation between leadership and performance, that was already established in the literature. Indeed, the results support the direct effect between leaders' strategies on performance, as well as an indirect effect through employee's well-being. These findings are even more relevant since the relationships established in the conceptual model concerns teleworkers and the management of virtual teams. Thus, it shows that these paths are significant for both face-to-face (e.g., Chen and Kao 2012; Inceoglu et al. 2018; Kelloway and Barling 2010; Nielsen and Taris 2019), and in telework.

Overall, the results highlight the positive role of the leader in teleworking context. Like in face-to-face regimes, the influence of leaders might impact on followers' identification with them, the organization, the team, and the job which, in turn, could explain the positive effect on employees' wellbeing (Inceoglu et al. 2018) and

performance. Another important aspect that may contribute to explain the results is related to the specificity of the sample collected. Most of the workers who answered the questionnaire may be considered knowledge workers, who have, according to the literature, a more positive view of this regime (Charalampous et al. 2018). Indeed, for this kind of workers working outside the traditional office environment reduces the number of interruptions leading to higher levels of concentration which improves the outcomes of telework (Charalampous et al. 2018). That is, for a sample of knowledge workers the strategies of the leader can be better accepted because these workers, when teleworking, tend to display more positive outcomes (e.g., higher job satisfaction and commitment and lower stress related to job demands—daily tasks and commuting) (Kelliher and Anderson 2010). However, they also reported working long hours (Grant et al. 2013), which is an expected result in the sense that knowledge workers heavily rely on ICTs, which allow them to stay connected when working from different locations (Inceoglu et al. 2018). Thus, the intensity of work and the pressure to be always online will decrease their levels of wellbeing like any other teleworkers (Toscano and Zappalà 2020).

5 Conclusions

The strategies of the leader are fundamental to well-being and performance in a teleworking context. Moreover, when workers show wellbeing at work, the strategies used by the leader seem to have a more positive effect on team performance. Employees' wellbeing contribution to improving teams' performance is undeniable. In fact, wellbeing is by itself, a worthwhile moral value that organizations should stand for and promote. Despite it can sometimes be difficult for managers to recognise it. Therefore, this study has important practical implications for organizations, as it highlights the importance of the strategies implemented by leaders to manage virtual teams that could lead to higher levels of wellbeing, and in consequence, improve the performance perceptions. Taken together, the results reinforce the need for leaders to remain alert to each team member specific needs, especially facing the challenge of physical distance. As teleworking becomes part of the present (and post-pandemic) reality, organizations need to adapt to it and prepare their leaders, so they can be able to use management strategies in a reliable and efficient manner, resulting in positive outcomes for their teams.

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