



Analyzing the impact of the shift to remote work mode on middle managers' well-being in the pandemic

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ARTICLE INFO

Article History:

Received 26 July 2022

Revised 18 April 2023

Accepted 23 May 2023

Available online 3 June 2023

Keywords:

Middle managers
Remote work mode
Teleworking
Well-being

JEL Codes:

M12
M15
M54
I10
I31

ABSTRACT

The shift to remote work mode significantly impacts the way people work, especially middle managers, who play a fundamental role in organizations. There is a broad consensus that they have a key responsibility in deploying strategies, and in terms of operations and organizational culture. Based on the responses of 200 managers from five Latin American countries working in several economic sectors, the effects of remote work demands on their levels of perceived work stress and general well-being were examined in this study. Through partial least squares structural equation modeling, the positive effect of remote work demands on work stress was verified. The analysis also suggested a competitive mediating effect of role transitions on the relationship between work stress and well-being. The study also provides theoretical and practical implications for human resource management and a design of flexible labor policies from a sustainability perspective.

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1. Introduction

Middle managers (MMs) play a fundamental role in organizations. They are key actors in strategy-implementation, they play a fundamental role in the transmission of the culture and values of an organization and, as human resource line managers, they can boost productivity and innovation (Ahearne et al., 2014; Chenet et al., 2015; Mair, 2005; McConville, 2006). In many cases, MMs also act as “umbrellas” protecting subordinates “by shielding them from what is often presented as excessive demands from top management above” (Gjerde & Alvesson, 2020: 126). Subordinates, whose interests are, in many cases, in conflict with those of their organization, also request MMs for resources, opportunities, recognition, etc. Consequently, MMs' position in the organization and the kinds of responsibilities they assume cause them to suffer top-bottom and bottom-up pressures.

This makes it especially interesting to analyze how MMs' job demands affect their psychological well-being (WEB). In addition, the circumstances that MMs faced during the COVID-19 pandemic substantially altered the way in which these managers should work, leading them to adopt a remote work modality (RWM). Virtual teams increased exponentially in firms of all sizes and in all sectors (Flavian et al., 2022). MMs were suddenly thrust into managing employees from a distance, irrespective of whether they were confident and prepared for this style of management (Knight et al., 2023). In this respect, it must be said that although the benefits associated with the implementation of RWM are widely accepted by academics and managers and there is evidence of its contribution to business management (Major et al., 2008; Nicholas, 2014), there is also evidence of negative impacts of RWM adoption on individuals and organizations (Felstead & Henseke, 2017; Song & Gao, 2020). In addition, previous research findings may have suffered from selection bias due to the largely planned and voluntary nature of remote work (Lapierre et al., 2016; Mohamed et al., 2023), which may have magnified its positive effects. However, in the case at hand, the shift to RWM was mandatory and unplanned, reason why in the literature it has been termed

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as enforced remote work (Anderson & Kelliher, 2020; Zhang et al., 2021).

Among the negative effects of RWM, especially when it is an enforced RWM, the specialized literature points to increased stress, anxiety problems, technology exhaustion, burnout symptoms, and, consequently, lower job satisfaction (JS), worse work-life balance (WLB), and risks to mental health (MH) and general WEB (Fonner & Roloff, 2012; et al., 2021; Molino et al., 2020; Singh, Bala et al., 2022; Song & Gao, 2020).

Therefore, this study attempts to offer a critical perspective on RWM by focusing on the nascent concept of enforced work from home brought on by the pandemic (Waizenegger et al., 2020; Zhang et al., 2021). The aim of this study is to analyze the extent to which the demands for enforced work from home affect MMs' WEB due to increased work stress (WS). Likewise, considering that RWM invades personal lives and blurs the boundaries between work and private contexts (Molino et al., 2020), we analyze the role of the management of role transitions (RTs) in these relationships. Grant et al. (2013) point out that the ability to manage work-life boundaries when teleworking can positively affect perceived levels of WEB, at least partially counteracting the negative effects of stress.

The results of this study show that there is a negative relationship between the demands of the enforced remote job and subjective WEB of MMs, both directly and indirectly. The latter is derived from the increase in perceived stress derived from the change in the work mode. The findings also reveal that the management of RTs mediates the relationship between perceived stress and subjective WEB. In this case, it is a competitive partial mediating effect, given that, while perceived stress has a negative relationship with both role transition and WEB, the relationship between the latter two is positive.

Regarding the contributions of this study, it should be noted that understanding the impact of remote job demands (RJDs) on MMs can help organizations support and retain talent by implementing effective policies that may potentially contribute to efficient remote work. In addition, given the very important role that MMs play in the organization as a liaison and transmission layer between the top management and rank-and-file employees, they can be key in providing resources to their subordinates to help them cope with the demands of RJM.

The remainder of this paper is organized as follows. Section 2 presents the theoretical framework; it defines and analyzes the relationships between RJDs, WS, RTs, and subjective WEB. Section 3 explains the research methodology, describing the sample, measures, and analysis strategies. Section 4 presents the results of the measurement model and the structural model assessment. Section 5 concludes the paper by discussing the theoretical and practical implications and recommendations. It also explains the study's limitations and the scope for future research.

2. Theoretical framework

2.1. Middle managers (MMs) as a priority target group to analyze the effects of job demands on stress and well-being (WEB)

In general, WS is considered an outcome of the imbalance between external demands and individuals' capabilities and resources in meeting those demands (Cooper et al., 2001). WS represents a large, complex, and costly phenomenon at the workplace worldwide, with significant negative effects on people's WEB. Occupational stress, also known as job or WS, can be defined as harmful physical and emotional responses that occur when job requirements do not match employees' capabilities, resources, and needs (NIOSH, 2002; Tongchaiprasit & Ariyabuddhiphongs, 2016).

According to the specialized literature and empirical evidence, it can be said that MMs are "sandwiched," having to face two directions and deal with both superiors and subordinates while receiving top-

down and bottom-up job demands (Gjerde & Alvesson, 2020; McConville & Holden, 1999). MMs feel pressure to work hard to achieve the set objectives, which often leads them to face conflicts with their subordinates on a daily basis. As Sims (2003:1201) said, they have "to put together a convincing story about what they are doing for the benefit of their seniors and also a (often conflicting) story for their juniors".

A great deal of research refers to the high levels of stress that these MMs must face and the risks of suffering burnout and WEB decline, which has made them a priority target group when analyzing both the determinants of stress and the measures to face it (Buick & Thomas, 2001; McConville & Holden, 1999; Singh & Dubey, 2011; Tao, 1986). The peculiarities of their work, derived from their position and the essential role that MMs play in implementing strategy, transmitting organizational culture, driving productivity and innovation by managing the organization's human capital (Ahearne et al., 2014; Chen et al., 2015; Mair, 2005; McConville, 2006), make them a particularly interesting and sensitive group to changes in work arrangements, such as those that occurred during the pandemic.

2.2. Remote work and enforced remote work in pandemic

Although there is no universally accepted definition of remote work, it is usually considered a particular type of flexible work pattern that denotes working without fixed spatial or time boundaries (Soga et al., 2022). Some work profiles are by nature partly or totally remote jobs (sales, repair, maintenance, etc.). However, this study considers remote work that has traditionally been carried out inside the organization's premises and is now performed outside the office and involves an intensive use of information and communication technologies (ICTs). Apart from remote work, other terms referring to workers partly or entirely performing their tasks and duties outside the office are: telework, telecommuting, e-working, or work from home, which is a more specific case of remote work (Ferrara et al., 2022; Singh et al., 2022).

As a consequence of the COVID-19 pandemic, the world experienced an unusual acceleration in the adoption of remote work or teleworking to ensure business continuity and maintain active operational and management flows. In this context, especially since March 2020, when a prolonged lockdown was declared in many countries, millions of workers, middle managers, and senior managers had to continue working toward their goals and assume responsibilities by adapting their work routines to the remote work mode at home. This kind of work arrangement had traditionally been volitional and specific to certain jobs before the pandemic, "but the pandemic removed the volitional factor from the work-from-home pattern" (Singh et al., 2022: 272) and brought the nascent concept of enforced work from home or enforced remote work (Anderson & Kelliher, 2020; Waizenegger et al., 2020; Zhang et al., 2021).

Remote work during the pandemic also differed from previous remote work arrangements in several other ways. This is because it was applied across the board (except in the case of some basic services and activities that could not be performed remotely), regardless of whether the characteristics of both the individuals concerned and their organizations were appropriate for its use. It was intensive, in the sense that it did not allow for periods of not working remotely, as all the work had to be done that way. Finally, as noted above, it was performed, in most cases, from the home, without the necessary planning, training, and provision of means, at least in its first stage (Sandoval-Reyes et al., 2021).

Throughout this study, when we use the terms "remote work" and "RJDs," we do so with the type of remote work imposed by the pandemic, that is, mandatory and unplanned remote work performed from home through the intensive use of ICTs.

2.3. Remote job demands (RJDs), work stress (WS), and well-being (WEB)

From the perspective of the job demands and resources theory (JD-R Theory) (Bakker & Demerouti, 2017; Demerouti & Bakker, 2022; Demerouti et al., 2001), a situation of imbalance between job demands and resources due, for example, to an increase in the demands of a job that is not accompanied by a proportional increase in an individual's personal, organizational, and external resources, can have negative consequences for the individual in terms of WEB, health, and productivity.

We define WEB, a key variable in our study, from the hedonic perspective that refers to subjective WEB as pleasant feelings, such as happiness and a positive emotional state (Litwin & Shiovitz-Ezra, 2011). At the workplace, it is defined as a positive emotional state arising from appraisal of one's work experience (Bowling et al., 2010). It is a multidimensional construct with indicators, such as JS, WLB, and MH, and is associated with turnover and performance.

Pre-pandemic research about the relationship between remote work and employees' quality of work life has produced inconclusive mixed results, finding both positive and negative effects of remote work on WEB (Anderson et al., 2015; Boell et al., 2013; Felstead & Henseke, 2017; Tavares, 2017; Ter Hoeven & Van Zoonen, 2015). The results of the pre-pandemic research have also been ambivalent regarding the impact of remote work on stress (Duxbury & Halinski, 2014; Gajendran & Harrison, 2007; Hartig et al., 2007; Russell et al., 2009; Sardeshmukh et al., 2012; Song & Gao, 2020; Sullivan, 2021). Given that traditionally, the shift to remote work has generally been a planned and voluntary change for a small variety of jobs, previous research findings may have suffered from selection bias, which may have magnified its positive effects and underestimated the negative ones (Lapierre et al., 2016; Mohamed et al., 2023).

The particular circumstances surrounding the adoption of teleworking during the pandemic foreshadowed a significant and negative impact on job stress and employee WEB, especially in the case of MMs, who, as noted above, are already subject to high levels of stress under normal conditions. As the ILO (2020) pointed out, during this urgent and unexpected situation caused by the pandemic, most employers, employees, and managers were neither physically nor mentally prepared nor did they have the necessary infrastructure to adequately face the challenge of working from home. In addition to the difficulties involved in RWM, people had to work remotely with all the members of the family unit confined at home and in a situation of high uncertainty regarding health, work, and the economy.

Recent research has provided evidence that these particular circumstances have accentuated the disadvantages of the RWM (Mohamed et al., 2023; Straus et al., 2022). Remote work at home, performed in a situation of isolation, sharing space with the family, through the intensive use of ICTs, and without having, in most cases, the necessary physical means, training, and experience implies assuming a new RJD. In this regard, RJDs such as increased workload (Knight et al., 2023; Lesener et al., 2019), work-home conflict (Delanoëje et al., 2019; Knight et al., 2023; Mohamed et al., 2023), family interference in work (Jamal et al., 2021), social and professional isolation (Ferrara et al., 2022; Fonner & Roloff, 2012), relational impoverishment (Gajendran & Harrison, 2007; Mann et al., 2000; Nardi & Whittaker, 2002), difficulties in "switching off" and detaching from work after hours (Felstead & Henseke, 2017), have been associated with a decline in employees' (and managers') WEB.

Increased workload was expected because individuals do not have experience of full-time telecommuting and because of reduced efficiency due to inadequate infrastructure and organizational practices (Jamal et al., 2021). The increase in work-home conflict and family interference in work is due to the factors like having to work from home, sharing space with the family, and having to assume multiple roles (Michel et al., 2010), which also disrupts child-care and affects

the education of children. The effects of this techno-invasion (Galanti et al., 2020; Tarafdar et al., 2007) and the ICTs' ability to invade users' personal lives blurs the boundaries between work and private contexts, increasing work-home conflict and hindering detachment from work. Similar effects are caused by an increased level of interaction and monitoring of employees needed to provide them support, solve their problems, try to maintain control over them, and track their performance (Parker et al., 2020). Finally, social and professional isolation and relational impoverishment are direct consequences of remote work at home in a confined situation. This leads us to propose the following hypothesis:

H1: The demands of remote work have a negative relationship with middle managers' (MMs) well-being (WEB).

Without disregarding the possible direct effects of these RJDs on WEB, it should be noted that many effects of RJDs on WEB are due to the stress they generate on an individual, which acts as a mediator in the RJD-WEB relationship.

Technology-related job demands can provoke technostress, especially in the case of unfamiliarity with the new technology, information overload, activity interruption, and other pressures related to communication use (Singh et al., 2022; Tarafdar et al., 2015). Molino et al. (2020) point out that technostress creators associated with RWM affect the level of stress directly and indirectly through the work-family conflict on account of techno-invasion. Furthermore, the connection between teleworking and stress, fatigue, and burnout is stronger when support from colleagues is lacking (Vander Elst et al., 2017). Work isolation may jeopardize employees' sense of belonging to their organization; it may also reduce the social support from colleagues, increasing the risk of stress and anxiety (Henke et al., 2016). Workload pressure, social and professional isolation, family-work conflict, and family interference in work are positively associated with stress levels (Galanti et al., 2021; Ingusci et al., 2021; Jamal et al., 2021; Singh et al., 2022).

Based on this analysis of past studies, the following hypothesis is proposed:

H2: The demands of remote work have a positive relationship with middle managers' (MMs) work stress (WS).

WS has been associated with negative impacts on different attitudinal and behavioral outcomes, and with different physical and mental diseases, which necessarily lead to a decrease in subjective WEB (Sandoval-Reyes, 2017; Verduyn et al., 2017; Yu, Park & Hyun, 2021). Murphy (2010) stresses the importance of emergent stressors associated with flexible work arrangements when analyzing the relationship between occupational stress and WEB. Song and Gao (2020) also associate the negative relationship between RWM and WEB with the stress it generates.

Regarding the relationships of WS with the three dimensions of subjective WEB considered in this study (work satisfaction, work-life balance, and mental health), as we will see in this section below, there is evidence of a negative relationship between WS and all of them.

Previous specialized literature has found a negative relationship between WS and JS, which is defined as one's emotional response to a job that results from expectations from the job and the reality of the job situation (Antonioni et al., 2003; Landsbergis, 1988; Terry et al., 1993). Job stressors are predictive of job dissatisfaction and a greater propensity to leave an organization (Cummins, 1990; Tongchaiprasit & Ariyabuddhiphongs, 2016).

WLB refers to a situation in which employees are able to effectively balance the responsibilities of work or career and those of their personal lives (Parkes & Langford, 2008; Quick et al., 2004; Sullivan & Mainiero, 2008). In general, specialized literature agrees on the

existence of a negative relationship between WS and WLB or a positive relationship with work-life interferences. This was shown by the results of Bell et al. (2012), Karkoulou et al. (2016), and Zaheer et al. (2016).

Regarding the effects of WS on MH, past research indicates that excessive stress can exacerbate MH issues and cause mental illnesses, such as anxiety and depression (Banerjee, 2012; ILO, 2016; Mark & Smith, 2012; Mensah & Amponsah-Tawiah, 2016), although the associations between WS and mental disorders vary by gender and disorders (Wang et al., 2008). More recently, Moreno et al. (2020) pointed out that WS has a negative relationship with positive MH and lower psychopathology symptoms.

Based on this discussion, the following hypotheses are proposed:

- H3. Work stress (WS) has a negative relationship with middle managers' (MMs) well-being (WEB).
- H4. Work stress (WS) partially mediates the relationship between remote job demands (RJDs) and well-being (WEB).

2.4. Management of role transitions (RTs)

RTs can be defined as “the psychological (and where relevant, physical) movement between roles, including disengagement from one role (role exit) and engagement in another (role entry)” (Ashforth et al., 2000: 472). RTs are boundary-crossing activities, and when individuals manage these transitions, they can move between two extremes: maximum separation of roles (segmentation) and maximum union (integration).

Matthews et al. (2014) show that role overload, a well-known stressor (Duxbury et al., 2018), makes it difficult to manage RTs properly, with negative effects on WLB. Techno-invasion, another known stressor, also blurs the boundaries between work and private contexts, hindering RTs' management (Molino et al., 2020) and making workers less able to reach a satisfactory WLB (Ghislieri et al., 2017).

In general, the RWM makes more daily work-to-home and home-to-work transitions (Delanoeije et al., 2019). In the case of the RWM established during the pandemic, with a few exceptions, employees and managers were forced to work in the space dedicated to the family and with the close and constant presence of the rest of the family unit. In this context, transitions between family and work roles (in most cases “interposed transitions”) were highly recurrent and could easily lead to situations in which the subject must mix its role identities by attending to work-related issues while sharing time and space with the family (Sandoval-Reyes et al., 2021). This situation leads frequently to undesired interruptions, requiring people to juggle between segmented roles with “immediate and negative effects on task enjoyment and mood” (Ashforth et al., 2000: 481).

Based on the conservation of resources theory, Carlson et al. (2015) suggest that when individuals transition between roles, they lose the resources that they are motivated to accrue and maintain, but managing multiple roles may also offer the potential to acquire and accumulate resources, rather than just depleting them. Wu et al. (2021) also reveal that micro-RTs can have positive effects in the form of affective resources, stressing the importance of managing work and family roles properly, but also of taking more effective breaks during a working day. Consequently, adequate management of RTs can help individuals acquire and accumulate resources and, therefore, cope better with the demands associated with different roles, which would have a positive effect on their WEB. Grant et al. (2013) point out that the ability to manage the boundaries between work and private life can heighten the levels of perceived WEB while teleworking.

This shows that WS generated by shifting to RWM negatively affects the management of role boundaries, forcing individuals to integrate roles over and above the pre-established segmentation rules. However, to the extent that individuals subject to these conditions are able to establish clear boundaries between the social domains of work and family or manage these blurred boundaries effectively, this could be expected to have a positive effect on their level of WEB. Accordingly, we propose the following hypothesis:

- H5. Work stress (WS) is negatively related with role transitions (RTs).
- H6. Role transitions (RTs) are positively related with well-being (WEB).
- H7. Role transitions (RTs) partially mediate the relationship between work stress (WS) and well-being (WEB).

Fig. 1. Shows the final hypothesized model:

3. Methodology

3.1. Sample

The minimum sample size required was calculated a priori using power analysis with G*Power 3.1.9.2 software. A one-tailed test was used, with an expected effect size of 0.10 following the recommendations of Lakens et al. (2018), a conventional significance level of 0.05, an expected power of 0.95, and with the definition of a predictor to be known. The results showed that the minimum recommended sample size for the analysis was 110.

Data collection was carried out between April 24 and May 25, 2020 and involved a total of 1285 people in Latin American countries who were sent an online questionnaire through the social network LinkedIn. Convenience sampling, a non-probability

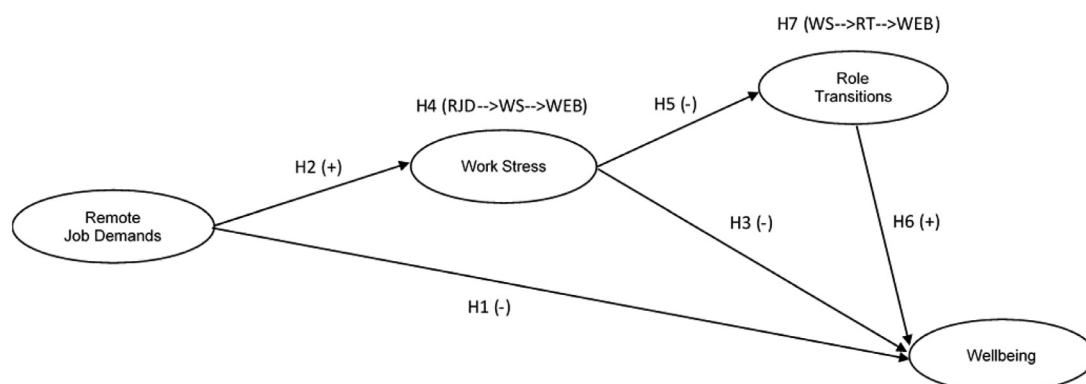


Fig. 1. Hypothesized model.

Table 1
Demographic information of final sample (N = 200).

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	114	57.0
	Female	86	43.0
Age	20–29 years	41	20.5
	30–39 years	62	35.0
	40–49 years	44	22.0
	50 or more years	45	22.5
Country	Colombia	140	70.0
	Ecuador	44	22.0
	Mexico	8	4.0
	Argentina	4	2.0
	Brazil	4	2.0
	Others	6	3.0
Industry	Education	29	14.5
	Services	76	38.0
	Commerce	30	15.0
	Finance	31	15.5
	Manufacture	15	7.5
	Public Sector	13	6.5
	Others	6	3.0
	Others	6	3.0
Job Tenure	0 - 5 year	21	10.5
	5 - 10 years	66	33.0
	10 - 15 years	34	17.0
	15 or more years	79	39.5

sampling technique, was adopted for data collection. The final sample used for the study consisted of 200 people who were working as MMs. Table 1 presents the demographic characteristics of the final sample.

3.2. Measures

RJD was measured using three items from the Quantitative Workload Inventory (Spector & Jex, 1998). These items were presented in a comparative rating scale of three options in which the participants answered whether in comparison to their traditional work mode “the feeling of working more,” “the feeling that I must work faster and at a greater speed,” and “the perception that I must work with greater effort” worsened, remained the same, or increased during the COVID-19-induced pandemic.

To measure WS, five items of the Folkman and Lazarus (1985) Work Stress Questionnaire were used, which assesses the perceived change in an individual's emotional state as a consequence of facing demanding situations in the work context. The items were presented on a 7-point Likert scale ranging from never (1) to always (7). An example of the items used is: “How often since I have been in remote work have I felt angry?”

For the measurement of RTs' management, two items from the Work Segmentation Preference Scale (Kreiner, 2006) were used. These items were presented in a comparative rating scale of three options in which participants answered whether in comparison to their traditional work mode “the possibility of separating myself

mentally from work” and “the separation of the work world from the personal world” worsened, remained the same, or increased during the COVID-19-induced pandemic.

Three questions were formulated to measure WEB. The participants were asked whether in comparison to their traditional work arrangement prior to quarantine by Covid-19 “my work-life balance has...”; “my job satisfaction has...” and “my mental health has...” worsened, stayed the same, or increased. Finally, gender was included as a control variable.

3.3. Analysis strategy

Statistical analyses were performed using partial least squares structural equation modeling (PLS-SEM). This method is considered the best suited to address the research question because it allows the estimation of complex models with multiple variables. It is oriented to explore new relationships between variables from the hypothesized models supported by strong theoretical bases, and it allows exploring mediating effects (Henseler et al., 2015).

PLS-SEM models comprise two fundamental elements: the measurement model and structural model. The former evaluates the relationships between the indicators and their constructs (validity and reliability), while the latter evaluates the predictive capacity of the relationships between the constructs addressed (Hair et al., 2017; Shmueli et al., 2019). The analyses were performed with SmartPLS v.3.3.3 tool (Ringle et al., 2015) that allows analyzing the heterogeneity of response types used in the questionnaire. For the measurement model, reliability was estimated through the rho_A and composite reliability (CR) coefficients; convergent validity was estimated through external loadings and average variance extracted (AVE). In the last step, discriminant validity was estimated using both the Fornell and Larcker (1981) criterion and the correlations heterotrismonorisk ratio (HTMT) method proposed by Henseler et al. (2015). To evaluate the structural model, the explained variance, effect size, predictive effect, magnitude, and statistical significance of the coefficients for each path proposed in the conceptual model were used.

4. Results

4.1. Correlation and descriptive information

Table 2 presents the correlations and descriptive statistics of the variables in the study. RJDs were positively correlated with WS ($r = 0.370$; $p < 0.001$) and negatively correlated with RTs and WEB ($r = -0.254$; $p < 0.001$ and $r = -0.352$; $p < 0.001$). For sociodemographic variables, the correlations were weak and non-significant.

4.2. Measurement model assessment

Reliability was evaluated using the internal consistency method. The four variables analyzed showed adequate levels of

Table 2
Correlations, means (M) and standard deviations (SD) among variables.

Variable	1	2	3	4	5	6	7
1. Gender							
2. Edad	0.078						
3. Tenure	−0.091	0.079					
4. Remote Job Demands	−0.187	−0.157	0.025				
5. Work Stress	−0.100	−0.159	−0.092	0.379***			
6. Role Transitions	0.112	0.059	0.040	−0.254***	−0.317***		
7. Wellbeing	0.017	0.857	0.126	−0.352***	−0.353***	.528***	
M	1.43	40.29	2.85	2.48	3.30	1.64	1.860
SD	0.496	11.634	1.063	0.558	0.992	0.679	0.634

Note: *** $p < 0.001$, two tailed.

Table 3
Reliability and validity statistics of the measurement model.

Variable	Outer Loadings	VIF	rho-A	CR	AVE
Remote Job Demands			.628	.796	.566
RJD1	.731***	1.315			
RJD2	.756***	1.274			
RJD3	.770***	1.162			
Work Stress			.864	.895	.631
WS1	.818***	2.534			
WS2	.798***	1.881			
WS3	.803***	2.001			
WS4	.693***	1.590			
WS5	.851***	2.908			
Role			.650	.810	.681
RT1	.786***	1.155			
RT2	.863***	1.155			
Wellbeing					
WEB1	.859***	1.294	.678	.729	.599
WEB2	.759***	1.023			
WEB3	.793***	1.268			

Note: *** $p < 0.001$; VIF = variance inflation factor; rho_A = Spearman correlation coefficient; CR = composite reliability; AVE = average variance extracted.

reliability and both the rho_A coefficient and the CR reached values above 0.60 (see Table 1), which shows that the constructs are reliable according to the recommendations suggested in the specialized literature for exploratory conceptual models (Hair et al., 2017). Convergent validity indicates that one construct measures in a similar way to another construct that is a part of the conceptual model. This evaluation criterion was developed both at the level of constructs and observed indicators. For constructs, the analysis of variance extracted (AVE) was used, in which values above 0.50 allow us to consider that the construct shares more than half of its variance with its indicators and it has an adequate level of validity (Fornell & Larcker, 1981). At the level of the observed indicators, the criteria used were the external loadings, where values higher than 0.070 and the variance inflation factor (VIF) which evaluates possible collinearity effects where values lower than 5.0 are considered appropriate in social sciences for initial models (Fornell & Larcker, 1981). As a result of this first action, it was found that the constructs and their indicators met the expected criteria and can be said to have convergent validity (Table 3).

Discriminant validity seeks to determine the extent to which a construct differs from other constructs included in the model. The criterion most widely accepted for its analysis is that the square root of the AVE should be greater than the correlation between constructs (Fornell & Larcker, 1981). In addition, and to obtain a greater depth of this analysis, the HTMT ratio procedure was developed in which values lower than 0.85 and whose confidence interval did not contain zero between the lower and upper limits were considered appropriate. The results of the two analyses (see Tables 4 and 5) meet the criteria referred to in the literature, which allows us to affirm that the constructs of the external measurement model have discriminant validity.

Table 4
Evaluation of discriminant validity through the Fornell-Larcker criterion.

Construct	RJD	WS	RT	WEB
Remote Job Demands (RJD)	.756			
Work Stress (WS)	.371	.795		
Role Transitions (RT)	−0.255	−0.317	.825	
Wellbeing (WEB)	−0.367	−0.357	.524	.706

Note: Square root of AVE on the diagonal; Correlations between constructs are shown below the diagonal.

Table 5
Evaluation of discriminant validity through the HTMT criterion.

Construct	RJD	WS	RT	WEB
Remote Job Demands (RJD)	—			
Work Stress (WS)	.506 (0.330;.658)	—		
Role Transitions (RT)	.426 (0.226;.636)	.459 (.264;.640)	—	
Wellbeing (WEB)	.682 (0.453;.908)	.535 (0.352;.707)	.845 (0.791;.928)	—

Note: Square root of AVE on the diagonal; HTMT below the diagonal; Numbers in parentheses represent the 95% confidence interval derived from bootstrapping for 5000 samples.

4.3. Structural model assessment

The results of the structural model are presented in Table 6. Regarding the effect of remote work demands on WEB (H1), a negative and statistically significant direct relationship was found ($t = 2.632$; $p < 0.05$), explaining 35.0% of the variance in the results of WEB of managers participating in the study. Regarding the effect of remote work demands on WS (H2), a positive and statistically significant direct relationship was found ($t = 5.989$; $p < 0.05$), explaining 13.8% of the variance in the results of stress perceived by the managers participating in the study. As for the effect of perceived WS on WEB (H3), a negative relationship was found, as proposed in the conceptual model, which was statistically significant ($t = 2.280$; $p < 0.05$), explaining 35.0% of the variance. The effect size was measured using the criterion set out by Cohen (1998), in which if $f^2 > 0.02$, it is weak; if $f^2 > 0.15$, it is medium, and if $f^2 > 0.35$, it is high. In this study, the effect of RJDs on WEB was weak ($f^2 0.054$) and on WS was medium ($f^2 0.160$). Meanwhile, the effect of WS on WEB was considered low ($f^2 0.027$). Regarding H4, which proposed a possible mediation effect of WS on the relationship between RJDs and WEB, a significant effect was found ($t = 2.087$; $p < 0.05$; LLCI −0.188, ULCI −0.007). For H5, which proposed a negative relationship between WS and RTs, a negative and statistically significant relationship was found ($t = 4.776$; $p < 0.05$), which explains 10.0% of the variance of the latent variable. There was also a medium effect size ($f^2 0.112$). H6 proposed a positive relationship between RT and WEB. The analysis found a positive and significant effect ($t = 6.161$; $p < 0.05$) and a medium effect size ($f^2 0.245$). The findings described above support H5 and H6.

Regarding the hypothesis of a possible mediation effect of RTs' management on the relationship between WS and WEB (H7), a significant effect was found ($t = 3.787$; $p < 0.05$; LLCI −0.215, ULCI −0.075). It must be highlighted that the direct relationships between RTs and the output latent construct are positive, but the total effect is negative (Table 6). This finding provides empirical support for H7 and allows us to state that there is a competitive partial mediating effect in which, although the relationship p loadings are significant, they point in the opposite direction to the direct effects found previously (Zhao, Lynch & Chen, 2010). For the analysis of the study, gender was included as a control variable. However, no significant differences were found in the levels of WEB of MMs.

Finally, the predictive PLS analysis was performed for all indicators defined in the conceptual model based on the calculation of the Q^2 predict according to the procedure suggested by Shmueli et al. (2019). When comparing the average magnitude of errors' (MAE) value with the linear regression (LM) model's value of each observed indicator, lower estimation errors were found in only two of the ten indicators analyzed (WS4 and RT2), which supports a medium predictive power of the model.

Table 6
Structural model estimates.

Hypothesis	ratio coeff.	t-value	p-value	95% CI	f^2	R ²	Q ² predict
H1 (RJD → WEB)	−0.205	2.632	0.009	(−0.361; −0.055)	.054	.350	.117
H2 (RJD → WS)	.371	5.989	0.000	(0.252; .497)	.160	.138	.122
H3 (WS → WEB)	−0.146	2.280	0.023	(−0.270; −0.018)	.027	.350	.117
H4 (RJD → WS → WEB)	−0.054	2.087	0.037	(−0.188; −0.007)			
H5 (WS → RT)	−0.317	4.766	0.000	(−0.451; −0.194)	.112	.100	.043
H6 (RT → WEB)	.426	6.161	0.000	(0.289; 0.559)	.245	.350	.117
H7 (WS → RT → WEB)	−0.135	3.787	0.000	(−0.215; −0.075)			

Note: 95% CI = Confidence Interval at 95% derived from bootstrapping for 5000 samples; f^2 = effect size; R² = variance explained; Q² predict = predictive effect.

5. Discussion and conclusions

This study aimed to identify the relationship between RJDs, WS, RTs' management, and employee WEB during the initial stage of lockdown induced by the COVID-19 pandemic. We analyzed this phenomenon for MMs, considering the partial mediating effect of WS in the RJD-WEB relationship and the competitive partial mediating effect of RT in the WS-WEB relationship.

Understanding the impact of the factors analyzed on MMs' WEB can contribute to enabling organizations to support and retain these essential employees, especially in the case of forced transition to RWM. Many managers and employers believe that in the future, the RWM will continue on a large scale. The lessons learned can also help shape approaches for implementing effective RWM policies and long-term remote assignments for strategic organizational reasons.

As expected, the results obtained showed that RJDs caused by the enforced change to RWM of MMs was related to a decrease in subjective WEB and an increase in perceived WS. This increase in perceived WS is also related to a decrease in subjective WEB, which leads to a partial mediation of WS in the relationship between RJDs and subjective WEB. However, the negative effect of WS on subjective WEB is partially compensated by the positive effect of RTs' management on the latter, as RTs act as a partial competitive mediator in the WS-WEB relationship. Although there is some evidence of gender-related differences in the effect of job characteristics on subjective WEB (Bastida et al., 2022; Mohamed et al., 2023; Trzcinski & Holst, 2012), this study's results did not show significant such differences in the case of MMs. Regarding the predictive capability of the model, the results of the predictive PLS analysis performed for all the indicators defined in the conceptual model support a medium predictive capacity; therefore, it could be used to estimate variance levels of endogenous constructs from other study samples.

In summary, the overall negative effect, both direct and indirect, of the RJDs on the WEB of MMs, due to the shift to RWM, was considerable and, to a large extent, due to the increase in perceived WS. However, the negative effects of the increase in perceived WS were partially mitigated to the extent that MMs were able to manage RTs effectively.

The results of previous research are ambivalent regarding the impact of RWM on employees' quality of work life, as both positive and negative effects on WEB were revealed. However, the results of other studies carried out during the pandemic coincide to a large extent with those obtained in this study. The results obtained by Mohamed et al. (2023) and Straus et al. (2022) confirm a decline in subjective WEB due to RJDs. Other studies, such as those by Ferrara et al. (2022), Ingusci et al. (2021), and Knight et al. (2023), highlight RJDs' negative effect on WS, which, in turn, shows negative effects on WEB (Molino et al., 2020; Singh et al., 2022; Verduyn et al., 2017). Regarding the role of RTs' management, our results also coincide with those obtained in recent studies that highlight the importance of boundary management tactics in minimizing the negative effects of the enforced shift to RWM (Allen et al., 2021; Demerouti & Bakker, 2022). It should be noted

that Grant et al. (2013) already pointed out that it is not the mere RWM arrangement but the ability to manage work-life boundaries that can increase WEB or mitigate its decline.

These findings suggest that organizations seeking to enhance WEB (or reduce its decline) of their remote workforce should implement policies and practices that reduce RJDs and increase the resources of their employees to enable them to meet the challenges of the shift to RWM. The following recommendations are intended as a starting point for designing strategies in which people's health and WEB are the central axis of the organizational management culture, incorporating corporate socially responsible human resource management (HRM) policies and practices (Celma Benaiges et al., 2018). It is worth mentioning that MMs should not only be the beneficiaries of these measures, but they should also actively participate in their implementation as team leaders, simultaneously adapting the way they remotely manage their subordinates.

MMs must be able to assume a considerable degree of control over the conditions in which the remote work is carried out. A certain degree of autonomy in the management of work timings and schedules should be promoted, and MMs must be able to better distribute their time between work and personal activities (Cañibano et al., 2020; Jamal et al., 2021; Wang et al., 2021).

MMs must be encouraged to be more open about their problems and attend support services and counselling. Assistance and emotional support from colleagues and supervisors should be promoted to facilitate informal and formal interaction. In this regard, measures such as coaching and training (especially in ICTs and emotion-related competencies) and improving remote workers' workspace with technical equipment, access to necessary materials, and high ergonomic standards will be helpful (Charalampous et al., 2021; Mohamed et al., 2023; Straus et al., 2022). These kind of measures can improve readiness for change and employee performance (Alqudah et al., 2022).

In addition, it is necessary for the top management to formulate policies, standards, and guidelines that guarantee employees the right to disconnect from work, promoting clear limits that help them separate the work and personal spheres to strengthen their WLB. This will not only directly affect MMs but will also provide them guidelines for their relationship with their subordinates.

Finally, another way to address RWM challenges could be to design flexible jobs and allow MMs to make changes in tasks, environment, and work roles to be proactive and to engage in self-directed job-crafting behaviors. Job crafting can help improve the fit between individual personal needs and abilities, and job characteristics (Ingusci et al., 2021; Van Wingerden et al., 2017). Although job crafting concerns employees' self-initiated actions to adapt to their job demands and resources, it may be supported by the management because the feedback employees receive on their job crafting actions may create more possibilities for job crafting or may inhibit job crafting from occurring in the future (Wrzesniewski, 2003).

Regarding the limitations, it should be noted that the study focused on a period that was subject to specificities, in which several factors that can be considered as generators of occupational stress were simultaneously combined. In addition to the already

demanding content of MMs' work, the uncertainty generated by the pandemic and the RWM implemented under exceptional conditions made MMs' work more challenging. All this may imply some limitations to our study insofar as it is impossible to determine the extent to which variables other than RJDs have influenced the increase in perceived WS and the decrease in WEB. Besides, this is a cross-sectional study that has considered the data between one and two months after the start of the lockdown decrees; therefore, it could only evaluate the short-term results and not their evolution over the medium- and long-term.

Future research should deepen the study of these phenomena by adopting a longitudinal perspective that allows exploring the patterns of change in MMs' and employees' WS and WEB. It should be done by controlling factors that can affect the RWM demands and resources balance, such as the voluntary or enforced nature of RWM, RWM experience and training, assistance and social support, job autonomy, job crafting behaviors, role boundary preferences, and working space equipment. This approach may allow for a better understanding of this phenomenon. Moreover, it may also help articulate effective, preventive, and palliative measures aimed at caring for employees' WEB for moral or social responsibility reasons and also for the positive effects they can have on productivity and on companies' ability to attract and retain valuable human capital.

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