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Examining job performance in work from home considering job concentration and social isolation: The moderating role of emotional stability in a diary study

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ABSTRACT

Using Self-Determination theory as the theoretical framework, this study investigates the impact of work from home (WFH) on employees' job concentration, social isolation, and job performance, with the first two also serving as mediators of the relationship between WFH and job performance. The moderation effect of an important personality trait, emotional stability, has been also considered. A diary study including 102 public sector workers was conducted over eight consecutive working days. Results showed that WFH is associated with increased job concentration and social isolation. These relationships are associated with workers' emotional stability, that enhanced the positive effects of WFH on job concentration and buffered the negative effects of isolation associated with WFH. Positive indirect relationships between WFH and job performance were found even when considering emotional stability. While offering insights on the mechanisms linking WFH to work outcomes, this study has implications for practitioners, suggesting that emotional stability may contribute to the success of WFH programs.

1. Introduction

Over the past few years, the COVID-19 pandemic has led to a significant increase in the adoption of remote work practices in both public and private organizations worldwide (Ahrendt et al., 2020, pp. 1–80; European Commission et al., 2020; Wang et al., 2021). Between 2020 and 2022, full-time remote work has been widely utilized to facilitate uninterrupted work activities and minimize social contact. However, as the pandemic has receded, many organizations revoked full-time remote work, and legislative restrictions of this arrangement have been in many cases adopted (Joly, 2022), shifting organizations towards hybrid work. This work arrangement involves a combination of working from the office and working remotely for specific periods. For instance, employees may be required to work at the office for three days a week and remotely two days a week (Vyas, 2022).

Remote work, both in full-time form and in hybrid form, has garnered significant research attention. Previous studies have mainly focused on remote workers' well-being and performance outcomes, by analyzing several predictors, including job autonomy (e.g., Dolce et al., 2020; Müller & Niessen, 2019), social interactions (e.g., Smith et al., 2018), management styles (e.g., Shockley et al., 2021) and organizational choices (e.g., the strategies for implementing remote work programs; Zappalà et al., 2021). One area that has received relatively little attention is the role of employee personality in determining how well individuals adapt to remote work (Grelle & Popp, 2021).

The available studies showed that psychological profiles, and coping skills, can have a significant impact on individual's ability to cope with remote work, affecting both well-being and productivity (Donati et al., 2021; Michinov et al., 2022; Toscano et al., 2022). However, two main limitations of these studies are that 1) they primarily concentrate on individual psychological differences as predictors of remote work outcomes, and 2) they disregard the actual time individuals spend working remotely versus in the office. While this focus may be adequate when examining full-time remote work arrangements, it proves to be quite restrictive when studying hybrid work.

In hybrid work arrangements, where employees divide their time between working from home and working at the office, it is essential to understand how individual personality traits interact with the work

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environment to influence employee work outcomes. Indeed, personality traits capture relatively stable, consistent, and enduring individuals' ways of behaving, feeling and reacting to other people and external events (McCrae & Costa, 2008). There is evidence that personality is strongly associated with organizational behavior (Chiaburu et al., 2011), job performance (Judge et al., 2007) or stress (J. Luo et al., 2023) in employees in traditional working conditions (i.e., full-time office work). Yet, little is known about the role of personality traits in shaping work related behaviors of employees engaged in hybrid work forms. In this regard, one of the few studies conducted on this topic by Parra et al. (2022) reported significant and positive associations between remote workers' exhaustion and their levels of neuroticism and opposite (negative) relationships with agreeableness and conscientiousness. These results seem in line with previous studies suggesting that emotional stability is the personality trait more strongly associated with exhaustion and burnout (Alessandri et al., 2018) and reporting a somewhat secondary (but protective) role of agreeableness and conscientiousness (Alarcon, 2011).

In sum, more research seems necessary to understand the impact of personality traits on employee performance and well-being in hybrid work settings. Thus, to address this research gap, we conducted a diary study (Nezlek, 2020) that tracked the impact of working from home or at the office at the within-individual level, allowing us to distinguish daily fluctuations from stable individual differences while minimizing retrospective bias and enhancing ecological validity. Our main objective was to investigate, in a non-mandatory hybrid work setting, the relationship between work from home and job performance. In doing so, we considered the impact of two key characteristics of remote working compared with working at the office: the relative physical isolation from coworkers and the need to remain concentrated on the job in a familial (non-working) setting. These two factors were selected because previous studies demonstrated their centrality in explaining remote workers' job performance and well-being (Taser et al., 2022; Toscano & Zappalà, 2020a). Importantly, these two constructs are at the basis of explanations of individuals' organizational behavior and performance based on Self-Determination Theory (SDT; Deci et al., 2017; Ryan & Deci, 2000). SDT was adopted as the theoretical framework of this study because it is a well-established theory of motivation, particularly relevant in the context of work from home as a discretionary experience. This makes it preferable to other approaches, such as the Job Demands-Resources model (JD-R; Bakker & Demerouti, 2017) or Conservation of Resources theory (COR; Hobfoll et al., 2018), which are more focused on stress and resource management than on capturing the motivation underlying a discretionary work arrangement. Moreover, considering that individual differences can predict the adjustment of remote workers (Parra et al., 2022) and individuals' mental health during the pandemic crisis (M. Luo et al., 2020; Vindegaard & Benros, 2020), focusing on the role of personality in hybrid work is crucial.

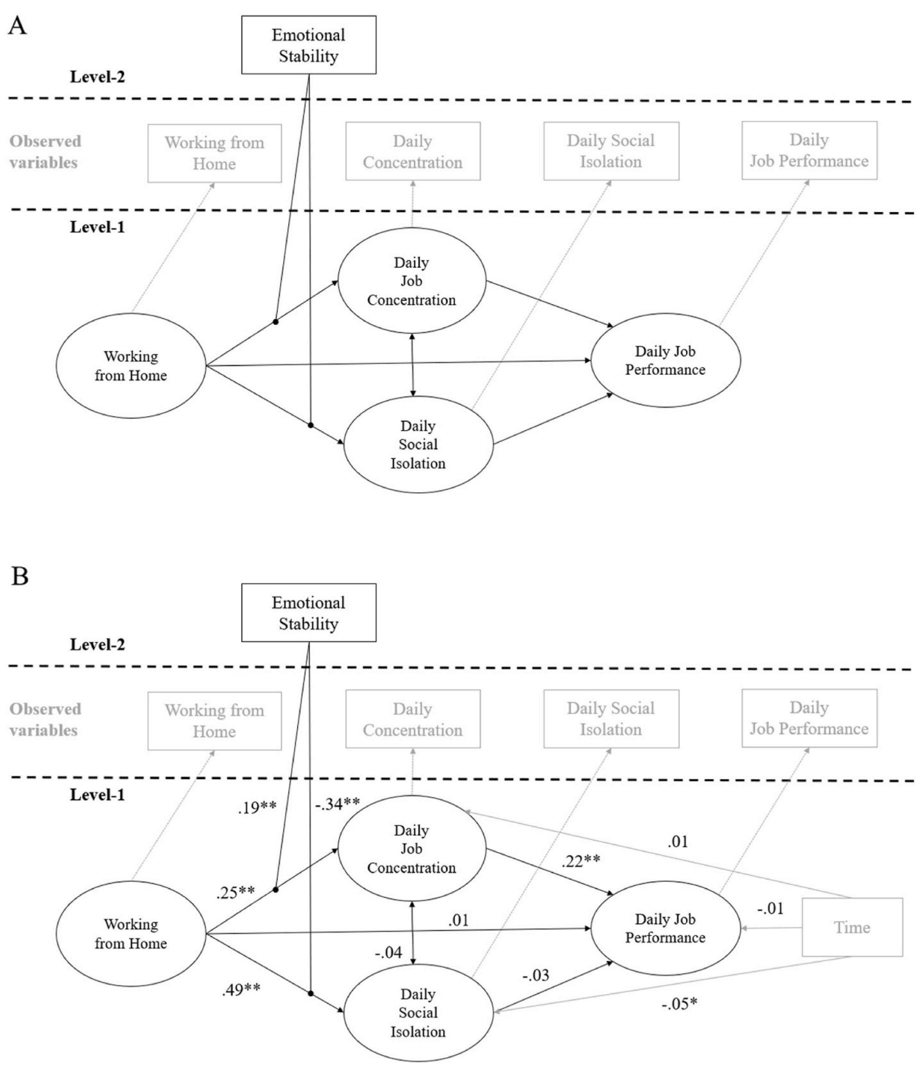

Fig. 1. The hypothesized model (Panel A) and the final model (Panel B) with unstandardized parameter estimates for direct effects.
Note. $^*p < .05$; $^{**}p < .01$; n.s. = not significant.

More in detail, in this study we aim to test the moderated mediational model presented in Fig. 1, Panel A. In this model, daily job performance is (1) positively and directly predicted by employees' daily reports of job concentration on the tasks to be performed, but (2) negatively predicted by employees' daily reports of isolation. The working condition, namely work from home or at the office, is expected to act as a direct and indirect predictor of job performance. In this regard, work from home is expected to exert an indirect and negative effect on job performance by increasing reports of daily isolation and while reducing reports of daily concentration. Daily reports of concentration and isolation are expected to act as mediators. Finally, emotional stability is posited in the model as a moderator of the relationship between working condition and daily reports of concentration and isolation.

This research addresses three relevant research gaps. Firstly, it aims to clarify the impact of different work settings (i.e., home or office) on employee performance. Secondly, the study aims to enhance the existing understanding of how social isolation and concentration, which have been identified as critical advantages and disadvantages of working from home or at the office, impact the job performance of hybrid workers. Thirdly, and most importantly, it aims to investigate whether emotional stability interacts with the use of WFH, shaping how employees adapt to hybrid work and modifying the effects of this work arrangement on the mechanisms that drive job performance. In doing so, it offers a novel perspective on the motivational dynamics underlying remote work effectiveness, challenging traditional models that primarily emphasize stress and resource management. Below, we offer a detailed literature review and provide a thorough justification of each hypothesis.

1.1. WFH and job performance through social isolation and concentration

The first objective of this study was to test whether the WFH adoption, in a hybrid work context, is positively related to daily job performance of hybrid workers. In doing this, we rely on the Self-Determination Theory (SDT) (Deci et al., 2017; Ryan & Deci, 2000) as our main theoretical framework, specifically drawing on the Basic Psychological Needs Theory within SDT. This framework posits that human motivation can be explained by three basic needs: autonomy, competence, and relatedness (Deci et al., 2017). *Autonomy* refers to the need to have control over one's own life and to feel that one's actions are self-determined. *Competence* refers to the need to feel capable and effective in one's environment. *Relatedness* refers to the need to feel connected to others and to have a sense of belonging.

According to SDT, we speculated that work from home, compared to work at the office, has a positive impact on job performance because it enhances feelings of autonomy. The idea is that when hybrid workers work from home, they perceive higher control over their work environment than when they work at the office. These increased feelings of autonomy are then expected to increase motivation and control over the work, thus fostering job performance (Johannsen & Zak, 2020).

Work from home can increase autonomy in multiple ways. First, employees have more control over their schedule when they work at home (Allen et al., 2015; Galanti et al., 2021; Toscano & Zappalà, 2020a). This allows them, for example, to work at a time that is best for them. Second, working from home provides employees with more control over how they communicate with colleagues and customers. For instance, they may select e-mail or phone calls depending on the type of communication or on the amount of time they have (Fonner, 2015). Feeling in control of the communication process may contribute to increased autonomy and thus improve job performance (Fonner & Roloff, 2010). Finally, workers may experience greater autonomy when working from home, especially when they work in shared office environments, where constraints from colleagues and users can limit their control. While home setups vary, WFH generally provides more control over the physical work environment than in the office, supporting the potential for improved job performance (Miglioretti et al., 2021). Accordingly, it is likely that working at home may allow employees to create an environment that is most conducive to their productivity. Drawing upon the above speculations we posited that.

H1. There is a positive relationship between WFH (vs. Working at The Office - WATO) and daily job performance.

Although we argue about a positive direct relationship, we also acknowledge the possibility of negative WFH effects on employee performance. Indeed, previous research shows that while mental concentration on the tasks to be performed is one of the main benefit of WFH (Allen et al., 2015; Zappalà et al., 2021), social isolation could be one of its key drawbacks (Allen et al., 2015; Cooper & Kurland, 2002; Toscano & Zappalà, 2020b). For this reason, we expect two different and potentially distinct routes linking WFH to performance: the first, positive trough increased concentration over work; the second, negative trough increased feelings of isolation.

We identified job concentration, defined as employees' state of focusing mental resources toward work tasks (Nohe et al., 2014), as a key advantage of the WFH adoption, in turn conductive to enhanced employee performance.

For this reason, we speculated that WFH is positively related to daily job concentration because it prevents the many distractions (e.g., noise, interruptions from colleagues or clients, etc.) that disrupt employees focalization on a job task and undermine performance levels (Wöhrmann & Ebner, 2021). Indeed, work from home may offer employees more control over the environment, allowing to arrange a more favorable work setting (Biron & van Veldhoven, 2016). According to the Self-Determination Theory (Deci et al., 2017), the increased feeling of control over one's work environment could lead to the fulfillment of human need for competence. Moreover, employees who feel to have a more nourishing work environment are more likely to focus on their work, and this in turn can improve their performance (Donnelly & Proctor-Thomson, 2015). For this reason, we posit that.

H2a. There is a direct positive relationship between WFH (vs. WATO) and daily concentration.

Despite such positive effects, the association between WFH and increased feelings of social isolation has been attested in previous studies reporting that social isolation reduces employees' sense of relatedness to colleagues and the organization (Montreuil & Lippel, 2003).

According to SDT, individuals who feel connected to others are more likely to be motivated and engaged in their work, leading to improved performance (Deci et al., 2017). Instead, social isolation can negatively impact an employee's sense of relatedness by limiting opportunities for social interactions, feedback, and the overall sense of belonging (Fonner & Roloff, 2010; Montreuil & Lippel, 2003; Toscano & Zappalà, 2020a). For instance, despite technological solutions guaranteeing job communications, at home casual interactions with colleagues (such as chatting in the break room or passing by someone's desk) are definitely reduced. The lack of face-to-face interaction can potentially lead to isolation. Furthermore, working remotely may limit exposure to a diverse range of perspectives and ideas that can be gained through daily interactions with colleagues in an office environment. For this reason, we posit that.

H2b. There is a direct positive relationship between WFH (vs. WATO) and daily social isolation.

1.2. Emotional stability as moderator in WFH associations with isolation and concentration

Studies on the impact of personality on remote workers perceptions of their job outcomes conducted before the COVID-19 pandemic appear scarce (Evans et al., 2022). Based on the limited available research adopting the big-five taxonomy (McCrae & Costa, 2008), emotional stability was found to be negatively associated to cyberslacking, a counterproductive workplace behavior involving distraction and putting off work to surf the internet (O'Neill et al., 2014). On the other hand, Smith et al. (2018) reported emotional stability was correlated neither with teleworkers' job satisfaction nor with satisfaction with their communication channels.

The COVID-19 pandemic outbreak renewed the psychological interest about the determinants of performance and wellbeing in hybrid work conditions (Evans et al., 2022; Michinov et al., 2022; Parra et al., 2022). In this regard, recent studies suggest that emotional stability was associated with decreased job satisfaction and increased burnout (Evans et al., 2022). Low emotional stability was associated with increased stress and exhaustion in remote work, and decreased job satisfaction and work engagement (Michinov et al., 2022). Despite these initial results, there is a clear gap in the role that emotional stability may have in shaping the relationship between working in different environments and job performance, all the more in samples specifically composed of hybrid workers. In this study, we aim to fill this important gap.

Emotional stability is a fundamental personality trait capturing employees' ability to regulate and control emotions in a positive way (Ellis et al., 2018). Emotionally stable employees show a balanced, calm and composed demeanor and the ability to handle stress, uncertainty and change without becoming overly anxious or upset (Widiger & Oltmanns, 2017). Emotional stability is crucial in organizational studies, where it has been reliably and positively linked with both job satisfaction and job performance (Judge & Bono, 2001).

In this study, we argue that emotional stability positively moderates the relationship between WFH and concentration. In this case, we posit that individuals with greater emotional stability have better self-regulation skills and this may help them not to be distracted by external factors (Bobrova et al., 2018). Additionally, they may also have better coping strategies for dealing with stress and anxiety (J. Luo et al., 2023), which are major distractions of work from home. This should enhance the positive consequences of the fulfillment of workers' need for competence (Benita, 2020). On the other hand, workers low in emotional stability may be vulnerable to distractions and may experience difficulty in keeping focus and concentration when working from home. They are likely to have troubles in regulating their emotions and may experience more anxiety and stress, which may have a negative impact on their ability to concentrate and perform well (J. Luo et al., 2023). Consequently, we hypothesize that.

H3a. There is a positive moderating effect of emotional stability in the relationship between WFH (vs. WATO) and daily job concentration.

Furthermore, this first stage moderation makes conditional the indirect effect linking WFH to job performance through daily job concentration.

H3b. The indirect positive relationship between WFH (vs. WATO) and daily job performance through daily job concentration is moderated by emotional stability.

Finally, in this study, we argue that individuals with higher emotional stability are better equipped to cope with social isolation resulting from WFH because they have better strategies for coping with feelings of loneliness and are better able to maintain their emotional well-being despite the challenges of this different work arrangement. From a SDT perspective, emotional stability should help preventing the negative consequences of the frustration of workers' needs, like in the case of the need for relatedness (Benita, 2020). On the contrary, individuals with lower emotional stability may be more vulnerable to isolation and loneliness and more prone to become exhausted when working from home (Parra et al., 2022), and so more susceptible to negative effects of isolation on their mental health and well-being (J. Luo et al., 2023). Thus, we finally posit that.

H4a. There is a negative moderating effect of emotional stability in the relationship between WFH (vs. WATO) and daily social isolation.

Putting all together, even in this case, this hypothesized moderation led to a last conditional indirect hypothesis.

H4b. The indirect negative relationship between WFH (vs. WATO) and daily job performance through daily social isolation is moderated by emotional stability.

2. Method

2.1. Participants

Participants were 102 employees, 78 % female, working in a local public institution and covering different roles, such as accounting, public space management, social services and other jobs. Their average age was 50.1 years (SD = 8.9), and their average organizational tenure was 17.6 years (SD = 11.4). In total, 526 valid daily observations were collected, meaning that each participant responded on average at about five out of the eight daily questionnaires. The overall response rate across the eight days was 64.5 %. About 63.1 % of the daily questionnaires were answered by participants when they were working in the office and 36.9 % on days when they were working at home. This proportion reflects the ratio of days worked at the office/from home within the organization, with 3 days at the office and 2 days remotely.

2.2. Procedures

The data collection took place in June 2021 and involved employees of a local public organization in Italy employing approximately six hundred people, some of whom performed tasks that could also be partially carried out from home. In the national context, remote work practices in the public sector were still emerging at that time, with hybrid work arrangements only gaining traction in successive years.

The study was conducted during the COVID-19 pandemic, specifically at a time when local health measures were relatively relaxed in that region. Although these conditions may have influenced employees' decisions or needs to work from home, the organization's WFH options were not introduced solely as a response to the pandemic. In fact, the organization had formally implemented a hybrid work arrangement three years earlier through internal agreements, allowing voluntary remote work up to two days per week (subject to the approval of the manager of the employee). This historical context limits, though does not entirely eliminate, potential pandemic-related biases in the data.

The employees who participated in the study agreed to complete a set of daily questionnaires through the Qualtrics online platform for a period of eight consecutive working days. The daily study period started for all the participants on a Monday and ended on the following Wednesday, with a break over the weekend. Employees completed a questionnaire at the end of each workday, using a link included in an e-mail written by the researchers and sent to employees by the organization's human resources department. Participants work from 8:00 a.m. to 2:00 p.m. on Mondays, Wednesdays, and Fridays, and from 8:00 a.m. to 5:00 p.m., with a 1-h lunch break, on Tuesdays and Thursdays. The email with the link was sent at 1:00 p.m. each day; it invited participants to complete the questionnaire on Mondays, Wednesdays, and Fridays, and served as an afternoon primer on Tuesdays and Thursdays. On the latter two days, a reminder from the HR office was sent at approximately 4:30 p.m. to encourage completion of the questionnaire at that moment. In all cases, participants could fill the survey until the end of the day (11:59 p.m.). Because the emails were managed and sent by the HR officers, and the number of remote workers was variable in that period (with new workers entering the remote work program and others returning full time to office work), the exact number of individuals initially invited to participate was not known to the researchers.

This study was approved by the Ethical Committee of the corresponding author's university and conducted in accordance with ethical principles and guidelines to ensure participants' rights.

2.3. Measures

The following constructs (Level-1 variables) were assessed daily.

WFH (vs. WATO). The carrying out of the work of the day from home or from the office was assessed through a simple question: "*Today, have you worked from?*", and the possible responses were "Office" = 0, and "Home" = 1.

Daily concentration. Daily concentration at work was assessed by the three items introduced by Nohe and colleagues (Nohe et al., 2014). An example of an item is: "*Today, I had total concentration*". Responses to this scale were set on a 7-point Likert scale (1 = "Not at all"; 7 = "Very much"). The reliability coefficient omega-within (Geldhof et al., 2014; McDonald, 1999) was .57 in this study.

Daily social isolation. Daily social isolation was assessed using four items from a scale by Golden et al. (2008), that we adapted for the daily study. An example of an item is: "*Today, I missed face-to-face contact with coworkers*". Responses to this scale were set on a 7-point Likert scale (1 = "Not at all"; 7 = "Very much"). The reliability coefficient omega-within was .79 in this study.

Daily job performance. Daily job performance was assessed using four items from Pettit et al. (1997) adapted to a daily context. The questions asked employees to self-assess the quality and quantity of the performance by adopting both their own and their supervisor's point of view. An example of an item is: "*Today, how do you think your supervisor would evaluate the quality of your performance?*". Possible answers were on a 7-point Likert scale (1 = "Very poor"; 7 = "Excellent"). The reliability coefficient omega-within was .88 in this study.

Emotional stability. Emotional stability, a level-2 variable, was assessed using a questionnaire administered before the start of the diary study. The questionnaire included the two items of the emotional stability scale from the 10-item version of the Big Five Inventory (BFI) (Rammstedt & John, 2007). Participants answered using a 7-point Likert scale (1 = "Totally disagree", 7 = "Totally agree"). An example of item is: "*I am a relaxed person, who copes well with stress*". Since the scale consisted of only two items, its reliability was assessed using Cronbach's alpha, which was .72, acknowledging that omega-within typically requires more items for a robust estimation.

2.4. Data analysis

Data in this study consisted of daily measures nested within participants. All the study variables were measured daily (Level-1), except for emotional stability (Level-2) that was measured only once (Goldstein, 2010). A two-level model with the repeated measures (daily variables) at the first-level (N = 526 observations), and the participants' emotional stability at the second level (N = 102 participants) was used to test the hypotheses. After a preliminary examination of the intraclass correlation coefficients (ICC) for the level-1 constructs, indicating the amount of within-person variance for these variables, a multilevel analysis (random effects), was run in Mplus 8.8 (Muthén L. K. & Muthén B. O., 2017) using Robust Full Information Maximum Likelihood (MLR), a method chosen because it provides robust standard errors, accounts for non-normality (K. H. Yuan & Bentler, 2000), properly handles missing data under the Missing at Random (MAR) assumption (Enders, 2010, p. 377), and is well-suited for hierarchical data structures in multilevel modeling (Snijders & Bosker, 2012). While computing the model, we did not center the level-1 variables to retain their natural within-person variability. However, we grand-mean centered emotional stability, as it is a between-person variable, to facilitate the interpretation of its moderation effects in cross-level interactions (Enders & Tofighi, 2007). Furthermore, we included in the model *time* as level-1 variable and regressed all level-1 variables on it to detrend the scores.

Testing our hypotheses required estimating a cross-level interaction where emotional stability (a level-2 variable) moderated the relationships between WFH and (1) daily job concentration, and (2) daily social isolation. Mplus 8.8 estimates these models using a maximum-likelihood estimator with robust standard errors and a numerical integration algorithm, that allow including random slopes in the model (Muthén L. K. & Muthén B. O., 2017). To investigate the statistical significance of mediated effects, we followed the credible interval method recommended by Yuan and MacKinnon (2009). This method is particularly suitable as it accounts for the skewness in the distribution of indirect effects.

3. Results

3.1. Preliminary analyses and correlations

Table 1 reports means (M), standard deviations (SD), and correlations between the study variables at the day level, except for emotional stability, which was measured in a single occasion.

3.2. Results from the hypothesized multilevel model with cross-level interactions[1]

Fig. 1, Panel B shows the results from the model with the hypothesized cross-level interactions.

As it can be seen, contrarily to the expectations, the direct relationship between WFH (vs. WATO) and daily job performance was not significant (−.01; $p = .88$; H1 not supported), while the direct relationship that WFH (vs. WATO) had with 1) daily job concentration (.25 $p < .001$; H2a supported), and 2) daily social isolation (.49; $p < .001$; H2b supported) were in each case significant and positive, as expected.

As can be seen in Fig. 2, Panel A, emotional stability significantly moderated the relationship between WFH and daily job concentration (.19, $p = .05$; H3a supported). However, the relationship between WFH and concentration was not significant at low (i.e., −1 SD) values (.03, $p = .77$) of emotional stability, but significant at high (i.e., +1 SD) values (.47, $p < .01$) of emotional stability.

Similarly, emotional stability significantly moderated the relationship between WFH and daily social isolation (−.34, $p < .01$; H4a supported). Nevertheless, Fig. 2, Panel B, shows that the relationship between WFH and daily social isolation was significant at low (i.e., −1 SD) levels (.88, $p < .001$), but not significant at high (i.e., +1 SD) levels of emotional stability (.11, $p = .48$).

The point estimates for the moderated indirect effects of WFH on daily job performance via (1) daily concentration and (2) daily social isolation at high (i.e., +1 SD) and low (i.e., −1 SD) emotional stability levels along with associated 95 % confidence intervals are shown in Table 2. The indirect effect of WFH on daily job performance via daily job concentration was positive and significant for both low (.20, $p = .02$) and high (.30, $p < .01$) levels of emotional stability, supporting hypothesis H3b. The indirect effect of WFH (versus WATO) on daily performance via daily social isolation was found to be positive and significant for both low (.49, $p < .001$) and high (.51, $p < .001$) levels of emotional stability. This contradicts hypothesis H4b, which predicted negative effects.

[1] At present, Mplus did not provide fit indices for models including cross-level interactions (Muthén & Muthén, 2018). To overcome this problem, we estimated a benchmark model identical to the hypothesized one except that it did not includ any cross-level interaction. Level-2 variables were posited as correlated. This model should represent a reasonable approximation of the tested model. Overall, this model fitted the data fairly well according to currently recommended standards (e.g., Kline, 2023): $\chi^2(4) = 9.93$, $p = .042$, CFI = .945, RMSEA = .053.

Table 1
Means, Standard Deviations, and Level-1 correlations among the variables.

	M	SD	$ICC_{(1)}$	(1)	(2)	(3)	(4)	(5)	(6)
1. Emotional stability (n = 102)	4.58	1.14	–	1	–	–	–	–	–
2. WFH	.37	.48	–	.09	1	.29**	.20**	.04	−.07
3. Daily social isolation	2.24	1.24	.57	−.22†	−.05	1	−.09	−.07	−.13*
4. Daily job concentration	5.29	.83	.35	.36**	−.17	−.39**	1	.32**	.01
5. Daily job performance	5.31	.67	.59	.25**	.12	−.27**	.49**	1	−.02
6. Time	–	–	–	.31**	.13	−.17†	−.57**	−.46**	1

Note. N = 526. WFH: Work from home (0 = Work at the office; 1 = Work from home). † < .10; *p < .05; **p < .01. Within level correlations are reported above the main diagonal. Time has fixed values.

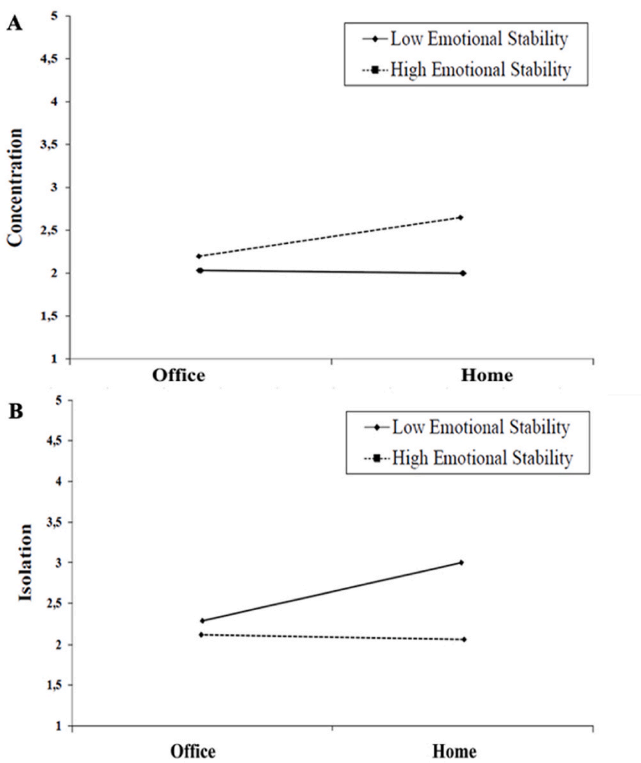

Fig. 2. Moderating effect of emotional stability in the relationship between work from home and daily job concentration (Panel A) and daily social isolation (Panel B).

Table 2
Point estimates and 95 % credible confidence intervals for the indirect effects.

Indirect effect	Estimate	SE	95 % CI
WFH → Daily job concentration → Daily job performance			
Lower Emotional Stability	.20	.09	.03, .37
Higher Emotional Stability	.30	.09	.12, .47
WFH → Daily social isolation → Daily job performance			
Lower Emotional Stability	.49	.11	.27, .70
Higher Emotional Stability	.51	.11	.28, .73

Note. WFH: Work from home.

4. Discussion

Overall, results from the present study supported our hypotheses, motivated by the SDT (Deci et al., 2017; Ryan & Deci, 2000), that work from home, compared with work at the office, is positively associated with both daily feelings of social isolation and job concentration. Importantly, these two basic qualities of the daily experience of the employees determine indirect effects in the relationship between WFH and daily job performance.

However, not all our expectations were supported. Indeed, daily concentration had a positive relationship with daily performance, whereas daily isolation did not show a direct relationship with daily performance. As hypothesized, emotional stability was found to moderate the relationships between work from home and both isolation and concentration, with the effects being however significant at only lower values of emotional stability for social isolation, and higher values of emotional stability for job concentration.

Present results suggest that the negative effects of WFH, such as feelings of isolation, are more likely to be experienced by individuals with low emotional stability and so high neuroticism. On the other hand, individuals with high emotional stability may not experience these negative effects as they possess the resources to effectively manage stress, anxiety and remote work loneliness (Galiano et al., 2023; Michinov et al., 2022). In other words, the study suggests that emotional stability plays a critical role in determining employees' perceptions of isolation when working from home.

In parallel, the beneficial effects of WFH on job concentration also occur at only certain values of emotional stability. In particular, WFH correlates positively with job concentration only in the case of individuals with high emotional stability, and thus low neuroticism. In contrast, workers with low emotional stability seems to not experience this positive side, as their low coping resources would not allow them to adapt to the WFH in such a way as to make this arrangement a resource for achieving higher levels of focus on the tasks they perform at home. A possible example of this effect could be a situation in which, for instance, the noise and distractions in the office can be replaced by distractions due to attention to house objects or people. Emotional stability in handling these domestic interferences would thus appear to be a factor that makes a difference in determining whether WFH actually facilitates job concentration.

The indirect effects calculated in the model further clarify the value of our findings. Notably, we observed no direct effect between WFH and daily job performance—a non-significant finding that contrasts with prior research reporting positive direct effects of remote work on performance (Allen et al., 2015; Gajendran & Harrison, 2007). One possible explanation is that WFH exerts both facilitating and constraining influences that ultimately cancel each other out. For example, while working from home may enhance autonomy and reduce office-related interruptions (Galanti et al., 2021), it may also introduce domestic distractions such as family obligations or the absence of a dedicated workspace, thereby nullifying any net direct effect on performance.

In contrast, significant indirect effects emerged through both mediators, moderated by emotional stability. Specifically, the indirect effect via job concentration positively linked WFH with daily performance, as anticipated. Surprisingly, an equally positive, and even more pronounced, indirect effect was observed through daily social isolation, which was initially expected to yield negative outcomes. This suggests that, while social isolation may be detrimental for workers with lower emotional stability, it does not necessarily impair performance. Instead, the overall pattern of results indicates that WFH correlates with higher performance through its combined effects on job concentration and social isolation, particularly among employees with higher emotional stability.

4.1. Theoretical implications

The present study has several theoretical implications useful to understand the relationship between work from home and daily job performance in a hybrid work context. Firstly, this study confirms, through a diary study able to effectively distinguish between social isolation and job concentration experienced at home and in the office (Nezlek, 2020), that WFH is positively, although indirectly, related to job performance. Although this result is not new in the literature (Allen et al., 2015; Gajendran & Harrison, 2007), this study is among the first to our knowledge to obtain this result by adopting this research method while considering two mediators in the investigated relationship.

Second, in explaining both the relationship between WFH and job performance, and the relationships with social isolation and job concentration, this study extends the applicability of SDT (Deci et al., 2017; Ryan & Deci, 2000), showing that it explains to a large extent the supposed relationships. We consider this theoretical approach a very promising framework to clarify the phenomena observed in hybrid work. However, we also recognize how other theories, such as the Job Demands-Resources Model (Bakker & Demerouti, 2017) or the COR Theory (Hobfoll et al., 2018), conceived in work contexts, can constitute at least equally valid theoretical frameworks, above all because both theorize right down to their basic mechanisms virtuous, motivational pathways and detrimental pathways of well-being and performance.

Third, while the positive mediating effect of job concentration in the relationship between WFH and daily performance confirms previous findings, the datum that this relationship is positive even when considering social isolation represents a novel contribution to literature. A possible explanation may come from the fact that, unlike studies conducted in contexts of forced and full remote work (Toscano & Zappalà, 2020b), the hybrid and optional context investigated here makes social isolation, experienced when working from home maximum two days in a week, not every day, a kind of resource which positively impacts on performance because, for instance, in their solitude workers can devote themselves to tasks that require more attention and that they could not perform in the office (Zappalà et al., 2021), however, with the comfort that social relationships and contacts might happen the following day.

Fourth, finally and most importantly, this study demonstrates how emotional stability affects workers' perceptions when working from home. In addition to suggesting that emotional stability matters in hybrid work and determines better results in those more emotionally stable, the study results highlight the importance of this trait in coping with hybrid work in the post-pandemic scenario we live in. Furthermore, they suggest scholars should focus more their attention more on this topic, since personality traits have so far been understudied in remote work contexts (Parra et al., 2022). In particular, as shown by this study, the moderating role of personality factors in the relationships between WFH and its outcomes should be explored, for example, in studies on the acceptability of WFH (Donati et al., 2021), or on those focused on employee well-being more than productivity (Charalampous et al., 2019). In general, we consider the attention to the fit between individual and work arrangement to be a field of considerable interest and in need of research, and we believe that efforts that integrate personality in this kind of study constitute an added value for the scientific community.

4.2. Practical implications

This study has practical implications for organizations and managers. Firstly, the study shows that WFH can have a positive effect on daily employee performance, despite the experienced social isolation and taking advantage of the benefits of concentration. Managers should consider this when establishing the best work arrangements for their employees and prefer the use of hybrid work when possible, given the positive effects it offers in terms of performance. Secondly, the study suggests that managers should be aware of the potential negative effects of work from home on employee isolation. So, they should make sure that employees working at home are well equipped with the necessary tools and support which has a role in reducing their social isolation. Thirdly, with a view to tailoring HR interventions on individuals (Taskin & Devos, 2005), the results highlight the importance of further accompanying less emotionally stable employees engaged in hybrid work programs. Individual differences in the capacity to regulate and control emotions, and to handle stress, uncertainty and change seem to affect the extent to which WFH translates into productivity on a day-to-day basis. Employees proficient in self-regulation might maximize the advantages of remote work (such as working in a quieter environment and better use of the greater work autonomy), whereas those who struggle with anxiety and uncertainty may see no net benefit. Moreover, the organizational context can play a pivotal role; our sample, from a public-sector institution with relatively stable tasks and formalized WFH policies, may have shown less variability in workload or performance targets, dampening direct effects on performance. Consequently, simply implementing remote-work policies may not automatically lead to universal performance gains. Instead, organizations should tailor interventions, such as providing training for self-regulate task prioritization, offering infrastructure support for home offices, and introducing strategies to mitigate social isolation, to fully leverage the potential benefits of WFH while mitigating its drawbacks. By doing so, managers can better harness remote-work arrangements that actively enhance employees' ability to perform at a higher level rather than merely shifting the physical workspace.

Finally, our findings also underscore that employees with lower emotional stability may be particularly susceptible to the challenges of hybrid work, such as increased social isolation or difficulties in maintaining concentration at home.

Organizations could explore training opportunities for enhancing personal skills, including task organization, time management, and stress management, to support the less emotionally stable hybrid workers, identified in ways that are compatible with respect for the worker. Furthermore, in alignment with the ethical principles and the agreements established with employees, organizations may also decide to privilege the choices of more stable employees in circumstances when hybrid work should be applied due to mandatory reasons. While acknowledging that this study does not exhaust the topic of possible indications for institutions, companies and managers on hybrid work, we hope it provides food for thought and practical suggestions for public and private organizations.

4.3. Limitations and strengths

This study has several limitations that should be considered when interpreting its findings. Firstly, due to its cross-sectional nature, it cannot establish causality between work from home and job performance, despite the advantages of the diary model. Additionally, the small sample size, while appropriate for a diary study, may limit statistical power, particularly for moderated mediation analyses. Future research should aim for larger samples to enhance robustness.

Second, participants were recruited through internal HR communication, and the total number of invited employees is unknown, introducing potential self-selection bias. Those who chose to participate may differ from non-participants in their interest in hybrid work or structured routines. Furthermore, reliance on self-reported data may introduce biases such as social desirability or recall effects. Future studies should incorporate supervisor evaluations, peer assessments, or objective performance metrics for a more comprehensive assessment.

Third, the eight-day duration of the diary study may not fully capture longer-term patterns or fluctuations in hybrid work experiences. Longitudinal studies with extended observation periods could provide deeper insights into the evolving effects of remote work. Additionally, findings are based on a single public sector organization, limiting their generalizability to other industries, job types, or cultural contexts. The structured, unionized environment with stable job tasks may not reflect private firms or multinational corporations. However, key traits of public institutions, such as hierarchical structures and formalized procedures, may make these insights relevant for similar settings.

Moreover, data collection occurred during a period influenced by country-specific COVID-19 policies, which may have introduced biases and limit the transferability of findings to non-pandemic contexts. Future research should examine whether similar patterns emerge under stable, post-pandemic work conditions.

Lastly, while we employed validated measures, psychological constructs are inherently challenging to capture fully. In particular, the reliability of our daily job concentration measure (omega-within = .57) was suboptimal, suggesting that future studies should explore more robust scales and consider integrating objective performance indicators for a more precise evaluation. Despite the limits of our study, we point out that it has some strengths that it is important to emphasize. Notably, the diary study design allowed to capture daily fluctuations in hybrid workers' experiences, effectively distinguishing between their experiences at home and in the office. Unlike traditional cross-sectional studies that provide only a static snapshot, this approach leveraged repeated within-person observations to offer richer insights into short-term variations, minimizing retrospective bias and enhancing ecological validity in understanding hybrid work dynamics. Furthermore, the adopted multilevel approach enabled us to take into consideration both intraday and interpersonal variations in the collected data.

Second, we emphasize the use of personality as a moderator in the relationship between hybrid work environments and job performance. While previous research has largely focused on describing the effects of WFH on performance, our study investigated how and for whom these effects occur. By integrating personality traits into the analysis, we provided evidence that emotional stability shapes the way employees adapt to hybrid work settings, offering new insights into the variability of remote work experiences across individuals.

Finally, our study is deeply rooted in the theoretical framework of Self-Determination Theory (SDT), providing a structured understanding of how hybrid work interacts with fundamental psychological needs, further reinforcing the importance of individual traits in shaping work-related outcomes. We hope this theoretical grounding, combined with our methodological strengths, positions our study as a valuable contribution to the body of research on hybrid work dynamics.

5. Conclusion

The study examined the impact of work from home on daily job performance, with the dual goal of testing both the mediating role of daily job concentration and social isolation and the moderating role of emotional stability in the relationships between work from home and the considered mediators. The results encourage the use of WFH, highlighting the indirect positive relationships it has with daily job performance. At the same time, however, the study has also identified that it is necessary to pay attention to the experience of individuals with lower emotional stability. Emotional stability emerged as a potential protective factor, which improves the outcomes of WFH with regard to both individual well-being and job performance. Although hybrid work contexts deserve numerous investigations, we hope to have provided some answers and indications to organizations, in a time when hybrid work constitutes the normal experience of thousands of workers worldwide.

CRediT authorship contribution statement

Ferdinando Toscano: Writing – review & editing, Writing – original draft, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Guido Alessandri:** Writing – review & editing, Validation, Software, Methodology, Investigation, Formal analysis. **Salvatore Zappalà:** Writing – review & editing, Writing – original draft, Validation, Supervision, Project administration, Methodology, Investigation, Data curation, Conceptualization.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used ChatGPT for the sole purpose of improving the written English. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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