

## Repositório ISCTE-IUL

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Deposited in *Repositório ISCTE-IUL*:

2022-12-29

Deposited version:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Junça Silva, A., Almeida, A. & Rebelo, C. (2022). The effect of telework on emotional exhaustion and task performance via work overload: The moderating role of self-leadership. *International Journal of Manpower*. N/A

Further information on publisher's website:

10.1108/IJM-08-2022-0352

Publisher's copyright statement:

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**The effect of telework on emotional exhaustion and task performance via work  
overload: the moderating role of self-leadership**

**Abstract**

**Purpose** – This study developed a framework that explains how and when telework is related to emotional exhaustion and task performance, by conceiving work overload as a mediator and self-leadership as a moderator. We conducted two studies. Study 1 aimed to understand whether telework would be related to emotional exhaustion and task performance and if work overload would mediate such relationships. Study 2 analyzed whether self-leadership was a significant moderator of the mediated relations found in Study 1.

**Design/Methodology/Approach** – The hypotheses were tested in a sample of 207 (in Study 1) and 272 (in Study 2) participants, that were exclusively teleworking. The results were analyzed using PROCESS macro in SPSS.

**Findings** – The results of study 1 showed that telework dimensions were negatively related to work overload, which consequently decreased emotional exhaustion and increased task performance. In Study 2, self-leadership moderated the indirect effect of work overload on the relationship between telework and emotional exhaustion, such that the indirect effect was stronger for those who scored higher in self-leadership. However, it was not significant for task performance.

**Originality/Value** - This paper adds to research on telework by focusing on the employee's mental health and performance, in the context of mandatory confinement. The authors identified telework dimensions that may act as resources to cope with the increased work overload inherent to telework, as well as the importance of personal resources in these relationships.

**Keywords:** Work overload; Telework; Emotional exhaustion; Performance; Self-Leadership.

## 1. Introduction

COVID-19 was an intractable crisis that made different countries impose mandatory lockdowns as a strategy to reduce the widespread of the virus (Jaiswal & Arun, 2020; Varma et al., 2022). As a result, most companies were forced to adopt telework to ensure the social distance between workers and at the same time their survival (e.g., Junça-Silva et al., 2022; Lim, 2021). Telework was defined as a flexible work arrangement that allows employees to perform their duties and communicate with colleagues and supervisors, from various locations (e.g., home), outside the employer's central premises, and supported by electronic communication devices and networks (e.g., Bentley et al., 2016). It presents a set of advantages for both individuals and organizations (Leung & Zhang, 2017); for instance, it seems to decrease stress, and improve performance (e.g., Jaiswal et al., 2022; Junça-Silva & Coelho, 2022; Kissi et al., 2019). These advantages have been attributed to increased flexibility and autonomy, lower work-family conflict, fewer interruptions, and improved concentration, among others (e.g., Allen et al., 2015; Golden, 2009; Mihalca et al., 2021). However, it also has shortcomings as it is associated with an intensified workload (e.g., Chigeda et al., 2022; Kelliher & Anderson, 2010; Leviatan et al., 2021), through for instance an increase in colleagues' and supervisors' e-mail requests (Bailey & Kurland, 2002), virtual meetings or phone calls out of the working schedule (e.g., Novianti & Roz, 2020). Theoretically, these empirical findings are supported by the four-factor Model of Teleworking proposed by Baruch and Nicholson (1997). Accordingly, they proposed four critical factors responsible for the success of teleworking: (1) job (e.g., work overload –higher concentration of tasks at work (Sutarto et al., 2022)), (2) organizational (e.g., organizational trust, flexibility), (3) individual (e.g., self-leadership), and (4) home/work (e.g., work-life interference).

Although the literature has demonstrated the influence of telework on burnout (a state of exhaustion that limits an employee's performance) and task performance (how effective is an individual while performing a formally assigned task)(e.g., Novianti & Roz, 2020), there are few studies analyzing how and when it happens (e.g., Bailey & Kurland, 2002). Moreover, most of these studies were developed in a pre-COVID-19 scenario and therefore did not consider certain demands inherent to this specific context (e.g., Junça-Silva et al., 2022); for instance, in Portugal, the percentage of teleworkers was around 6.5% before the pandemic crisis (Eurofound, 2017) and has increased to 12% by the end of 2021 (Delicado & Ferrão, 2021). Moreover, many of these workers started to telework for the first time in the mandatory confinement, without any prior preparation, some of them with their children at home, and had to try to balance their work with their family life.

Aiming to develop knowledge on these issues, we conducted two studies in Portugal. The first was conducted in the first mandatory confinement, between March and May 2020, and aimed to explore how telework influences emotional exhaustion and task performance by analyzing the mediating role of work overload in these relations. Study 2 was conducted in the second mandatory confinement, between January and March of 2021, and aimed to understand when these relations occur by analyzing the role of self-leadership – a personal resource that enables individuals to control their environment successfully by helping them to better manage their job demands (Xanthopoulou et al., 2009) - in the mediated links tested in Study 1. We believe that this study is of key importance to identify how and when telework may lead to employee's increased emotional exhaustion and decreased performance. Thereby, study 1 aimed to answer *how* it happens (analyzing work overload as a linking mechanism between telework and emotional exhaustion, and task performance), and study 2 aimed to understand *when* it occurs by exploring whether self-leadership could function as a buffering effect of these indirect relationships.

## **2.Theoretical background**

### **2.1.Telework**

Although the adoption of telework has been increasing in recent years, it was only after the COVID-19 outbreak that a great number of companies were forced to quickly adopt a telework regime to ensure their business continuity. It is estimated that about 81% of the worldwide workforce has been affected by some form of lockdown measures due to the COVID-19 crisis (International Labour Organization (ILO), 2020). However, before the outbreak of the COVID-19 crisis, only a part of the working population occasionally worked from home. Telework ranged from 30% in Denmark, Sweden, and the Netherlands to 10% in Greece, Italy, and Poland (ILO, 2020). For example, according to Milasi et al. (2020), before the pandemic, only 15% of employees in the EU were teleworking, but this number increased to around 40% in 2020. In Portugal, the percentage of teleworkers was around 6.5% before the pandemic crisis (Eurofound, 2017) and at the end of 2021, it has doubled (Delicado & Ferrão, 2021).

Nilles (1997) defined telework as a broad and complex phenomenon involving the use of electronic communication devices to support workers in carrying out their tasks and communicating with colleagues and superiors from various locations outside the employer's central premises. More recently, it was defined as the work that is performed with the support of information and communication technologies (ICTs) such as smartphones, tablets, laptops, and desktop computers while conducting assignments outside an employer's location, along with a voluntary-based agreement between an employer and an employee (ILO, 2020).

The literature identifies different terminologies and definitions of telework (e.g., Allen et al., 2015; Grant et al., 2019), such as telecommuting, remote work, e-work, flexible work, flexplace, virtual work, and distance work (Allen et al., 2015). These various concepts arise from the different disciplines that have different theoretical backgrounds, and research

goals (e.g., information systems, management, communication, psychology). Telework has been more often used by European and Australian scholars (Allen et al., 2015). Similarly, telecommuting is referred to the work that is performed away from a central workplace (e.g., from home) using technology to interact with others (Allen et al., 2015; Pearce, 2009). Plus, remote work and distributed work are terms more general than telecommuting and telework which are referred to as any form of work performed outside the central office. Moreover, flexible work arrangements give a more general perspective of telecommuting, as they not only include telecommuting but also diverse flexible work programs such as flextime and compressed work weeks. At last, virtual work is referred to the work activities performed by individuals, or teams, who work together in a virtual environment using information and communication technologies, due to the geographic distance (Tworoger et al., 2013).

Telework has become an option for several companies as it has also several advantages for both employers and employees (Leung & Zhang, 2017), At the *organizational level*, telework is beneficial as it leads to (a) increased productivity and job satisfaction; (b) reduced turnover, absenteeism, and costs (e.g., rents and parking); (c) greater efficiency in attraction and recruitment processes and; (d) the possibility to maintain work activities in disaster or emergencies, as in the current COVID-19 pandemic (e.g., Fonner & Roloff, 2010; Grant et al. 2013; Jaiswal et al., 2022; Mihalca et al., 2021).

At the *individual level*, telework is shown to (a) increase flexibility, autonomy, and job satisfaction and; (b) reduce daily commuting to work (and associated costs), interruptions and distractions, work stress, and work-family conflict (Barber & Santuzzi, 2015). However, it has been associated with (a) work overload; (b) intrusion into private life that may increase work-family conflict; (c) increased anxiety, stress, and social isolation (Hartig et al., 2007).

Baruch and Nicholson (1997) proposed the four-factor Model of Teleworking to explain its effectiveness. This model may offer a promising approach to identifying the

critical factors for the success of teleworking during COVID-19 (Mihalca et al., 2021).

Accordingly, the effectiveness and feasibility of telework depend on four realms that need to be satisfied simultaneously: (1) *job factors* refer to the nature of work and the technology used for specific work roles (e.g., flexibility), (2) *organizational factors* represent how telework-supportive the organization is, including aspects such as organizational trust in teleworkers, (3) *home/work factors* include aspects such as quality of personal/family life (e.g., work-life interference), and (4) *individual factors* that are related to individual differences such as personality traits, attitudes, and needs (e.g., self-leadership).

More recently, Grant et al. (2019) highlighted that telework was a multidimensional phenomenon (Grant et al., 2019) and proposed a four-dimensional model, *the e-work life*, to analyze the quality of work-life in telework. The four dimensions are (1) work-life interference (the degree to which work interferes with personal and family life domains); (2) organizational trust (perceived trust from supervisors); (3) flexibility over time and location of individuals' work (e.g., freedom to schedule the working hours), and (4) productivity/effectiveness. This model is relevant to understanding the quality of telework life as it identifies aspects of the teleworker (e.g., work-life interference), the job (flexibility), and the organization (organizational trust) (Charalampous et al., 2022) that impact diverse work-related outcomes, such as task performance, and individual ones, such as well-being (Charalampous et al., 2022; Grant et al., 2019).

## **2.2. The relationship between telework and work overload**

Telework has been consistently associated with work overload (Grant et al., 2019) due to the intensification of working hours, requests, or technology use after hours (Camacho & Barrios, 2022). Work overload is a job demand that refers to the concentration of tasks assigned to an individual at work (Certo, 2003; Sutarto et al., 2022). When the work assigned exceeds one's capacity, work overload tends to occur. Thus, work overload occurs when

individuals perceive a lack of time, or energy, to meet their job demands (Khuong & Yen, 2016; Kissi et al., 2019).

Work overload has negative effects, such as decreased job satisfaction, performance, and organizational commitment, and increased turnover (e.g., Brown & Benson, 2005; Ngamkroekjoti et al., 2022). When overloaded, employees tend to have difficulty coping with the demands of the work environment, leading to increased stress and decreased performance (Ladebo & Awotunde, 2007). Moreover, when employees experience a continuous state of work overload tend to feel tired decreasing their motivation to perform effectively. Hence, the continuous excessive workload tends to lead to physical, mental, and behavioral problems (Khuong & Yen, 2016), such as psychosomatic complaints (e.g., Barriga Medina et al., 2021), counterproductive work behaviors (e.g., Karatepe, 2013; Kissi et al., 2019), and increased errors when performing the tasks (e.g., Leviatan et al., 2021), which in turn decreases the worker's ability to attain work goals (Tang & Vandenberghe, 2021).

Camacho and Barrios, in 2022, identified two major sources of stress in telework during the pandemic crisis: work overload and work-home conflict. Similarly, Wang et al. (2021) demonstrated that the key challenges experienced by teleworkers during the pandemic crisis were work-family interference, workload, and excessive monitoring from supervisors that negatively affected their well-being. In another study conducted in Portugal, Junça-Silva et al. (2022) showed that telework influenced well-being through the experience of telework-related events (e.g., intensification of work and working after hours). Similarly, Andrade and Petiz Lousã (2021) evidenced that, during the COVID-19 outbreak, Portuguese teleworkers experienced higher work overload and after-hours work-related technology use that in turn resulted in increased levels of work-family conflict.

### **2.3. The relation between telework and emotional exhaustion mediated by work overload**



Occupational stress has increased in the last decade; it occurs when the job demands exceed the individuals' resources, needs, or abilities (Bentley et al., 2016) and triggers physical and emotional reactions (Lazarus, 1990; Shirom et al., 1997). There is a large amount of evidence showing that continuous exposure to work-related stressors can deplete the worker's resources, and lead to diverse negative responses, such as burnout (Bakker & Demerouti, 2007). Burnout is a psychological syndrome related to physical or emotional reactions to chronic occupational stress, which may generate negative emotions and attitudes toward work (Maslach et al., 1996; Maslach et al., 2001). It is defined as "a state of exhaustion in which one is cynical about the value of one's occupation and doubtful of one's capacity to perform" (Maslach et al., 1996, p. 20), and includes three dimensions: emotional exhaustion, cynicism, and reduced professional self-efficacy (Maslach & Jackson, 1981; Maslach et al., 1996). In this study, we will focus on emotional exhaustion since it is considered the core, harmful dimension of burnout (e.g., Bresó et al., 2007). It occurs when the individual is physically, psychologically, and emotionally exhausted, resulting from continuous exposure to excessive demands at work (Maslach & Jackson, 1981).

Theoretically, this is supported by the job demands and resource model (JD-R; Demerouti, et al., 2001). Accordingly, it is assumed that the working conditions have two characteristics that may harm or facilitate well-being: job demands or job resources. Job resources are aspects of work that help the individual to deal with daily job demands buffering its negative impact, and as such contribute to goal attainment, well-being, or job satisfaction (Bakker, & Demerouti, 2017). From the conservation of resources perspective, resources can also serve to get additional resources (Hobfoll, et al., 2018). Resources can be organizational (e.g., job security), interpersonal (e.g., colleagues and supervisor support), related to the organization of work (e.g., role clarity), and to the task itself (e.g., skill variety) and personal (self-leadership; Bakker et al., 2004). On the contrary, job demands are

psychosocial aspects of work that force the individual to use additional mental and emotional effort and have been associated with reduced work engagement and negative attitudes towards work and others, leading to deterioration in mental health and costs for the organization (e.g., Barriga Medina, et al., 2021). One of the most common job demands is work overload (e.g., Pluta & Rudawska, 2021). Job demands appear to be negatively related to job resources as demands force the individual to use their resources as a strategy to better deal with them (Demerouti et al., 2001). According to the JD-R, job demands are triggers for the health damage process, while job resources are triggers for the motivational process (e.g., Bakker & Demerouti, 2014). Hence, job demands are the most predictive factors as they deplete individual energetic resources (Jaiswal & Arun, 2020).

A great amount of research has consistently demonstrated that high job demands predict burnout (Alarcon, 2011). For instance, in a meta-analysis, work overload was found to correlate with emotional exhaustion, more than job resources suggesting that employees are more vulnerable to resource losses (Lee & Ashforth, 1996). As explained by the primacy of loss hypothesis - conservation of resources theory (Hobfoll, 2001) - job demands have a greater effect on stress and burnout than job resources.

The Eurofound and ILO (2017) report stated that teleworkers are more likely to experience work overload and other risks that can affect their well-being; however, empirical evidence has shown that telework is associated with decreased levels of occupational stress (Grant et al., 2013). Moreover, Bailey and Kurland (2002) showed that teleworkers have more flexibility than office workers, which may act as an additional resource to cope with job demands, and consequently reduce stress. In addition, less commuting to work and fewer interruptions from colleagues and superiors also seems to reduce stress (e.g., Fonner & Roloff, 2010). However, what these studies have in common is that they were conducted before the pandemic crisis of COVID-19. More recently, Mihalca et al., in 2021, evidenced

that teleworkers, during the period of the pandemic crisis, tended to experience work overload that in turn increased their emotional exhaustion. In a similar vein, Schmitt et al., in 2021, demonstrated that cognitive mediated the relationship between telework and well-being. Weinert and colleagues (2014), in a study with IT teleworkers, demonstrated that work overload, work-family conflict, information underload, and social isolation were predictors of emotional exhaustion due to teleworking. Moreover, the authors identified work overload as the strongest predictor of emotional exhaustion due to teleworking.

Therefore, based on the JD-R and the findings described before, we hypothesized that:  
**Hypothesis 1:** Work overload will mediate the relationship between telework dimensions (a) work-life interference, (b) organizational trust, (c) flexibility, and emotional exhaustion.

#### **2.4. The relation between telework and task performance mediated by work overload**

Job performance is an extremely important factor for workers and organizations. It was defined by Campbell (1990; cited by Koopmans et al., 2012) as the “behaviors or actions that are relevant to the goals of the organization” (p. 704). Performance includes three dimensions: task and contextual performance, and counterproductive work behaviors. *Contextual performance* refers to all behaviors that promote and “maintain the organizational, social and psychological environment” (Motowidlo et al., 1997, p. 75), such as cooperation, effort, persistence to finish tasks successfully, advocating organizational goals, and facilitating team and colleagues’ performance (Koopmans et al., 2012). Finally, *counterproductive work behaviors* are behaviors that somehow may be harmful to the organization, such as absenteeism, theft, or substance abuse (Koopmans et al., 2012). *Task performance* relates to how well individuals perform the tasks and central techniques of their job, implying that they use specific skills and technical knowledge to accomplish the task in an efficient way (Scotter et al., 2000). That is, it includes “scalable actions, behaviors, and outcomes that employees engage in or bring about that is linked with and contribute to

organizational goals” (Viswesvaran & Ones 2000, p. 216). In this study, we will focus on task performance because, given the time in which the studies were conducted, that is, during the pandemic, this dimension of performance was the more salient (Junça-Silva & Silva, 2021).

Studies analyzing the relationship between telework and performance have shown results that are not consensual; while some demonstrated that certain telework characteristics, such as the ease of access or the blurring of professional and family boundaries, harm performance (Derks et al., 2014), others demonstrate that telework is associated with increased performance (Kwon & Jeon, 2020). For instance, Junça-Silva, Almeida, and Gomes (2022) showed that telework improved task performance because workers experienced higher levels of positive affect when teleworking. Similarly, Mihalca et al. (2021) have shown that telework was associated with work overload, and this, in turn, predicted job performance. Moreover, the Eurofound and ILO report (2017) reported an improvement in cross-country performance during telework. The report also suggested that these improvements may be due to the individual’s increased ability to concentrate, as there are fewer interruptions, and because workers tend to work longer hours when teleworking. Gajendran, Harrison, and Delaney-Klinger (2015) also showed that telework was positively associated with task performance.

In addition, empirical studies have consistently demonstrated that work overload not only is associated with telework but also with decreased performance (e.g., Campo et al., 2021). When individuals are experiencing strain due to the intensification of work, they tend to dedicate time and energy to cope with that rather than to work, which leads to reduced job performance and even burnout (Lord & Kanfer 2002; Tams et al. 2018). Additionally, teleworkers may experience lower performance due to the fatigue provoked by work overload (Chang et al. 2009; Tams et al. 2018). Plus, by feeling tired frequently teleworkers may experience lower work engagement which may account for decreased performance (e.g., Tang

& Vandenberghe, 2021). Camacho and Barrios, in a study conducted in 2022, demonstrated that work overload in telework not only generated strain but also decreased workers' perceived task performance. Thus, we hypothesized the following:

**Hypothesis 2:** Work overload will mediate the relationship between telework dimensions (a) work-life interference, (b) organizational trust, (c) flexibility, and task performance.

### **3. Study 1: The mediating role of work overload on the relationship between telework and emotional exhaustion and task performance**

The goal of the first study was to analyze whether work overload would mediate the relationship between telework and emotional exhaustion and task performance (Figure 1).

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Figure 1 about here

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#### **3.1. Method**

**3.1.1. Participants and procedure.** Participants were Portuguese teleworking adults from the researchers' professional networks. We sent them emails asking them to answer an online survey about telework attitudes. In that email, we presented the goals of the study to the participants and asked for their agreement to participate. Those who answered this initial email were emailed again with the informed consent for them to sign and with the hyperlink to the survey. We also assured the anonymity and confidentiality of the data. To ensure a focus on the objective of the study, a minimum requirement was set that participants had to be exclusively teleworking. Thus, only those respondents who met this requirement were able to proceed with the questionnaire. From the 300 emails sent returned 207 valid responses (response rate = 69%).

Participants were from different occupational areas, including 45% from the education sector, 30% from services, and 25% from the financial sector. Of the 207 participants, 68.6%

were women ( $N=142$ ) and the mean age was 37 years ( $SD=11.2$ ). As this study was conducted during a period of mandatory confinement, between March and June of 2020, most respondents were isolated at home. Their mean period of isolation was 48 days.

**3.1.2. Measures.** *Telework.* To measure telework we used the E-Work Life Scale (EWLS) developed by Grant et al. (2019). This included 13 items that assess three dimensions inherent to telework: (a) work-life interference (seven items; e.g., “I am happy with my work-life balance when teleworking”); (b) organizational trust (three items; e.g., “My organization trusts me to be effective in my role when I am teleworking”); and (c) flexibility (three items; e.g., “My line manager allows me to flex my hours to meet my needs, providing all the work is completed”). The items were answered on a 5-point Likert scale (1=*Strongly Disagree* and 5=*Strongly Agree*).

*Emotional exhaustion.* We used six items from the Maslach Burnout Inventory – General Survey (MBI – GS) (Schaufeli et al., 1996) that assessed emotional exhaustion (e.g., “I feel emotionally drained from my work”). The items were answered on a 5-point Likert scale of frequency (“1 = *Never*” to “5 = *Daily*”).

*Task performance.* This was measured with five items from the Individual Work Performance Questionnaire (IWPQ) (Koopmans et al., 2012). An item example was: “I managed to plan my work so that it was done on time”. Participants answered on a five-point Likert scale (1: “*Rarely*”; 5: “*Always*”).

*Work overload.* We used the Role Overload scale of Bacharach et al. (1990). This included three items (e.g., “I am rushing to do my work”) answered on a 4-point Likert scale, where 1 = *Definitely false* and 4 = *Definitely true*.

### 3.1.3. Statistical Procedures

First, we calculated the descriptive statistics, reliabilities, and correlations. Because we had different Likert scales to measure the variables, we standardized the variables as a

strategy of putting the variables on the same scale. This process allowed us to compare the scores between the different variables. To test the mediation hypotheses (H1, H2) we conducted diverse mediation analyses through Hayes' (2018) PROCESS macro (model 4). The statistical significance of the indirect effect on each outcome variable was assessed by bootstrapping (5000 samples) with a 95% confidence interval (Hayes, 2017).

Because both the predictor and the criterion variables were measured at the same time, we took some strategies to avoid the issue of common method variance (Podsakoff et al., 2012; Islam & Tariq, 2018). First, we shuffled the questions of various measures and then used various dummy questions (e.g., I like sunny days). Second, Harman's single factor test was used to assess the common method variance, and it was observed that the single factor accounted for only 22.18% variance, which was much below the standard value of 50% proposed by Podsakoff et al. (2012), thus the common method variance issue was not severe for this study.

### **3.2. Results**

**3.2.1. Descriptive statistics and correlations.** Table 1 shows the descriptive statistics and the correlations of the variables under study.

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Table 1 about here

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*3.2.2. The indirect effect of work overload between work-life interference and emotional exhaustion.*

Hypothesis 1a proposed that work overload would mediate the link between work-life interference and emotional exhaustion. The indirect effect of work-life interference on emotional exhaustion through work overload was -.11 with 95% CI [-.18, -.06], indicating a

significant mediation effect (see Table 2). The relationship between work-life interference and work overload (a;  $B = -.50, p < .001$ ) and the relationship between work overload and emotional exhaustion (b;  $B = .57, p < .001$ ) were significant. The total effect (c;  $B = -.61, p < .001$ ) between work-life interference and emotional exhaustion, and the relationship between work-life interference and emotional exhaustion after introducing affect were also significant (c';  $B = -.50, p < .001$ ), revealing a partial mediation effect. Thus, H1a was supported.

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Table 2 about here

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*3.2.3. The indirect effect of work overload between work-life interference and task performance.*

Hypothesis 1b assumed that work overload would mediate the relationship between work-life interference and task performance. The indirect effect of work-life interference on task performance through work overload was significant .05 with 95% CI [.00, .09] (Table 3). The links between work-life interference and work overload (a;  $B = -.23, p < .01$ ), and between work overload and task performance (b;  $B = -.23, p < .01$ ) were significant. The total effect (c;  $B = .20, p < .0001$ ), and the direct effect (c';  $B = .16, p < .001$ ) were also significant, revealing a partial mediation effect. Therefore, H1b was supported.

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Table 3 about here

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*3.2.4. The indirect effect of work overload between organizational trust and emotional exhaustion.*

Hypothesis 1c predicted that work overload would mediate the relationship between organizational trust and emotional exhaustion. Table 4 shows that the indirect effect of



organizational trust on emotional exhaustion through work overload was significant  $-0.10$  with 95% CI  $[-0.18, -0.03]$ . The relationship between organizational trust and work overload (a;  $B = -0.13, p < .01$ ) and the relationship between work overload and emotional exhaustion (b;  $B = 0.81, p < .0001$ ) were significant. The total effect (c;  $B = -0.28, p < .001$ ) and the direct effect (c';  $B = -0.18, p < .01$ ) were significant, revealing a partial mediation effect. Thus, H1c was supported.

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Table 4 about here

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### *3.2.5. The indirect effect of work overload between organizational trust and task performance.*

Hypothesis 2a assumed that work overload would mediate the link between organizational trust and task performance. The indirect effect of organizational trust on task performance through work overload, was significant  $.04$  with 95% CI  $[.01, .07]$  (Table 5). The relationship between organizational trust and work overload (a;  $B = 0.13, p < .01$ ) and the relationship between work overload and task performance (b;  $B = -0.28, p < .001$ ) were significant. The total effect (c;  $B = 0.16, p < .001$ ) between organizational trust and task performance, and the relationship between organizational trust and task performance (c';  $B = 0.13, p < .01$ ), after introducing work overload, were also significant. Thus, H2a was supported.

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Table 5 about here

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### *3.2.6. The indirect effect of work overload between flexibility and emotion exhaustion.*

Hypothesis 2b proposed that work overload would mediate the relationship between flexibility and emotional exhaustion. The indirect effect of flexibility on emotional exhaustion through work overload was significant  $-0.09$ , with 95% CI  $[-0.15, -0.03]$  (Table 6). The links

between flexibility and work overload ( $a; B = -.12, p < .01$ ) and between work overload and emotional exhaustion ( $b; B = .76, p < .0001$ ) were significant. The total effect ( $c; B = -.39, p < .0001$ ) was also significant, as well as the direct effect ( $c'; B = -.30, p < .0001$ ), showing a partial mediation effect. Thus, H2b was supported.

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Table 6 about here

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### *3.2.7. The indirect effect of work overload between flexibility and task performance.*

Hypothesis 2c proposed that work overload would mediate the relationship between flexibility and task performance. In Table 7, we see that the indirect effect of flexibility on task performance through work overload was significant .03, with 95% CI [.01, .07]. The link between flexibility and work overload ( $a; B = -.12, p < .001$ ) and between work overload and task performance ( $b; B = -.28, p < .001$ ) were significant. The total effect ( $c; B = .15, p < .01$ ) and the direct effect ( $c'; B = .12, p < .01$ ) were also significant, revealing a partial mediation effect. Thus, H2c was supported.

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Table 7 about here

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## *3.3. Discussion*

This study develops an understanding of why telework is related to emotional exhaustion and task performance, by considering work overload as a mediator.

First, the results indicate that the lower the work-life interference, the lower the work overload, and consequently, emotional exhaustion tends to be lower and task performance higher. This means that effective management of the boundaries between the work and non-work domains will translate into better mental health and improved ability to perform tasks.

Second, we demonstrate that the greater the organizational trust, the lower the work overload, and as such, the emotional exhaustion decreases and task performance increases. Thus, when there is organizational trust, workers make efforts to maintain good relationships with their superiors, and vice versa, which, in turn, tends to reduce stress and increase resources to carry out the work in an efficient way.

Overall, the results show that the greater the flexibility, the lower the work overload, and therefore, emotional exhaustion is lower, and task performance is higher. This means that increased flexibility by the company allows greater control over when and where work occurs, which translates into an improvement in the worker's mental health and performance.

#### **4. Study 2: the moderating role of self-leadership on the mediated relations of telework and emotional exhaustion and performance, via work overload**

The practice of telework is a challenging process for individuals, given its inherent characteristics and demands. However, teleworkers have more autonomy to manage their schedules and perform their tasks. Thus, they must manage themselves to achieve effective performance (Gajendran & Harrison, 2007), and self-leadership plays a central role in telework (Goldsby, et al., 2020).

Research in self-leadership suggests that it can be an appropriate training tool for teleworkers as a strategy for improved task performance (e.g., Goldsby et al., 2020). The social cognitive theory argues that self-leadership can assist workers in better managing their thoughts, behaviors, and environment (McCormick, 2001).

Self-leadership is a process of self-regulation that allows individuals to regulate what they do, how they interact with others, and how they decide to lead themselves and others by using certain behavioral and cognitive strategies (Neck & Houghton, 2006). To do so, they use a set of three cognitive and behavioral strategies to increase personal effectiveness: (1)

behavior-focused strategies, (2) natural reward strategies, and (3) constructive thinking strategies (Neck & Houghton, 2006).

In the present study, we will focus on behavior-focused strategies: self-reward and goal setting since these are more related to performance self-management (Singh et al., 2022). Behavior-focused strategies are behaviors that improve the awareness a person has of what they are trying to accomplish, especially regarding tasks with which one might want to procrastinate (Manz & Neck 2004; Neck & Houghton 2006). It includes (a) self-observation (when individuals observe their behavior and assess whether it is effective, or whether it should be changed), (b) personal goal setting (when individuals continuously adjust their professional and individual performance goals, and may significantly increase their performance levels), and (c) self-reward (when individuals use, tangible or intangible, tools as a form of self-motivation to achieve goals) (Neck & Houghton, 2006). These strategies aim to increase the individual's self-awareness, by controlling and shaping their behaviors, especially those related to work tasks (Neck & Houghton, 2006).

Considering the JD-R, self-leadership may be considered a personal resource. According to the JD-R, job demands interact with resources and influence the motivational process that accounts for employees' health and well-being (e.g., burnout; Bakker & Demerouti, 2007). Specifically, resources appear to act as buffers of the process through which job demands improve stress and burnout (Bakker & Demerouti, 2014). There are diverse empirical demonstrations that have shown that employees who have more personal resources have been found to better deal with job demands (Bakker et al., 2005) as such resources are associated with an individual's success to control and influence the environment (Xanthopoulou et al., 2009).

Additionally, personal resources and characteristics are conditions that not only buffer the detrimental effects of job demands on well-being but also facilitate well-being

improvement and task performance (Mihalca et al., 2021). This occurs because personal resources, such as self-leadership, positively influence the individual's self-perception of what happens, and thus help to develop a better balance between the individual, and his/her skills (Xanthopoulou et al., 2007, 2009). In addition, having self-awareness of actions and results can help teleworkers to set meaningful goals for themselves (Neck & Houghton 2006) which improves their performance (Locke & Latham 1990; Neck & Houghton 2006). Plus, attributing self-rewards to attained goals can encourage teleworkers to take the initiative to overcome procrastination and/or poor prioritization (Manz & Neck 2004). At last, self-observation, in the context of telework, improves self-awareness of the antecedents and consequences of perceived time pressure which is a crucial aspect of changing self-destructive or limiting performance behaviors (Neck & Houghton 2006). Hence, based on the JD-R and the findings described, we expected that:

***Hypothesis 1a:*** The indirect relationship between telework and emotional exhaustion through work overload will be conditionally dependent on levels of self-leadership, such that the indirect effect will be stronger when self-leadership is lower.

***Hypothesis 1b:*** The indirect relationship between telework and task performance through work overload will be conditionally dependent on levels of self-leadership, such that the indirect effect will be stronger when self-leadership is lower.

(Figure 2).

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Figure 2 about here

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## 4.1. Method

**4.1.1. Participants and procedure.** We used the same procedure from study 1. From the 300 emails sent, we obtained 272 valid responses (response rate = 90.6%). Participants

were Portuguese teleworkers from the same areas as study 1 (educational: 38%, services: 32%, and finance: 30%). The majority of them were women (67%), and the mean age was 39 years old ( $SD=12.32$ ). As the study was carried out during the second mandatory confinement, between January and March of 2021, the participants were isolated in their homes, for an average of 115 days.

**4.1.2. Measures.** We used the same measures used in the first study, except for self-leadership.

*Self-leadership.* This was assessed with four items adapted from Houghton and Neck's scale (2002). Participants indicated their degree of agreement (e.g., "I set specific goals for my performance") on a 6-point Likert scale (1 = *Strongly Disagree*; 6 = *Strongly Agree*).

## 4.2. Results

**4.2.1. Descriptive statistics and correlations.** Table 8 presents the descriptive statistics and correlations of the variables.

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Table 8 about here

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**4.2.2. Hypotheses testing.** We expected that the indirect relationship between telework and emotional exhaustion, and performance, through work overload, would be moderated by self-leadership, with the mediating effect being stronger for individuals with lower levels of self-leadership. To test these hypotheses, we split them into two phases. First, and as suggested by Hayes (2018), the isolated moderation effect of self-leadership on the relationship between work overload and emotional exhaustion, and task performance, was tested using model 1 on PROCESS. The products (moderations) were centered on their mean value, and the bootstrapping method was applied (5,000 resamples) to obtain confidence intervals (CI). Then,

we tested the full moderated mediation model through model 14 on PROCESS (Hayes, & Rockwood, 2017).

Moreover, to avoid the issue of common method variance (Podsakoff et al., 2012) we followed the same strategies from study 1; first, we shuffled the questions and then used various dummy questions (e.g., I like pets). Second, we performed Harman's single factor test, and it was observed that the single factor accounted for only 19.15% variance, which was below the standard value of 50% (Podsakoff et al., 2012); thus, the common method variance issue was not severe for this study.

**4.2.2.1. The moderated effect of self-leadership on the mediating effect of telework on emotional exhaustion through work overload.** First, we tested the moderation effect of self-leadership on the relationship between work overload and emotional exhaustion. The analysis revealed a significant interaction effect between self-leadership and work overload ( $B = .21$ ,  $\beta = .08$ ,  $\Delta R^2 = .30$ ,  $p < .01$ ). The simple slopes of the interaction between self-leadership and work overload showed that for individuals with high levels of self-leadership (+ 1 *SD*) emotional exhaustion was higher for those who experience more work overload ( $B = .90$ ,  $\beta = .10$ ,  $p < .01$ , CI95% [.74, 1.12]).

Then, we tested the overall moderated mediation model. The findings showed a significantly moderated mediation index of  $-.08$  with a CI of 95% [-.16; -.01]. A simple slope analysis, as recommended by Dawson and Richter (2003) showed that the mediated effect (work overload) was significant at all three levels of the moderator (-1 *SD*:  $B = -.18$ ,  $\beta = .06$ , CI 95% [-.29; -.06]); M:  $B = -.25$ ,  $\beta = .05$ , CI 95% [-.35; -.15]; +1 *SD*:  $B = -.33$ ,  $\beta = .06$ , CI 95% [-.45; -.21]). Specifically, the indirect effect of telework on emotional exhaustion via work overload was stronger for individuals with higher levels of self-leadership, than for those with lower levels (Figure 3). Thus, H1a was supported (Table 9).

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Table 9 and Figure 3 about here

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**4.2.2.2. The moderated the effect of self-leadership on the mediating effect of telework on task performance through work overload.** First, we tested the isolated moderation effect of self-leadership on the relationship between work overload and performance. The analysis revealed a non-significant interaction effect between self-leadership and work overload ( $B = .07, \beta = .04, ns$ ), and as such, we did not continue with the analysis. Thus, H1b did not receive support.

### **4.3. Discussion**

While the first study answers how telework is related to task performance and emotional exhaustion (via work overload), this study answers when this occurs. As such, we explore whether self-leadership moderates the mediated relations found in Study 1.

The results indicate that when work overload is high, individuals with higher levels of self-leadership report higher levels of emotional exhaustion. This means that when individuals are more concerned about monitoring their performance, for example, through goal setting, they tend to feel more emotionally exhausted. Even though task performance appears to be higher for those who score high on self-leadership, the moderated mediation relation is not statistically significant. Thus, despite the slight improvement in teleworkers' task performance, their mental health will suffer to some extent.

## **5. General Discussion**

This research develops a framework that explains how and when telework is related to performance and emotional exhaustion. Study 1 answers the “*how*” question and conceives work overload as a mediator of the link between telework dimensions – work-life



interference, organizational trust, and flexibility – and emotional exhaustion and task performance. And Study 2 answers the “*when*” question and conceives self-leadership as a moderator of the indirect path.

The results show that telework dimensions seem to decrease work overload which, in turn, reduces emotional exhaustion and increases task performance. That is, telework tends to be beneficial, not only for mental health but also for task performance. These results may be explained by several factors.

First, about work-life interference, when individuals can manage efficiently the boundaries between the professional and non-professional domains, work overload tends to decrease, and as a result, their mental health is not negatively affected (e.g., Charalampous, et al., 2022; Grant et al., 2019). At the same time, employees who can balance their work and family life tend to experience a greater ability to focus on the tasks at hand, and their job satisfaction and performance tend to increase (e.g., Karatepe, 2013; Leviatan, et al., 2021).

Second, regarding organizational trust, a trusting relationship between workers and their superiors may result in better communication, less pressure at work, and more support, which improves mental health. In addition, when individuals feel they can trust their superiors, they tend to feel more secure, motivated, engaged, and resourceful to carry out their work in the best way (e.g., Bentley et al., 2016; Grant et al., 2013; Junça-Silva, et al., 2022).

Third, regarding flexibility, some factors that may explain the results are: (a) the reduction in daily commuting and exposure to traffic and public transport stress ; (b) increased control over work enables more opportunities for leisure or to spend time on hobbies, which may contribute to better recovery from daily work (Sonnentag, 2018), higher happiness (Junça-Silva, & Coelho, 2022) and consequently, to stress reduction; (c) greater autonomy allows the individual to manage work and non-work appointments, in the best way, providing a greater telework/life balance; (d) fewer distractions during work, enabling more

concentration on the tasks at hand and; (e) greater autonomy in managing the work schedule gives opportunity to decide when to work, for instance, in periods of higher efficiency (e.g., Grant et al., 2019).

### **5.1. Theoretical implications**

Overall, these results are in line with Baruch's and Nicholson's (1997) four-factor model of teleworking and the telework model of Grant and colleagues (2019). Both models identify key factors for the success of telework, both in the form of effectiveness (Baruch, & Nicholson, 1997) and telework-related well-being (Grant, et al., 2019). Accordingly, job (flexibility), organizational (organizational), and home/work (work-life interference) factors are responsible to dictate the effectiveness and feasibility of telework (Baruch, & Nicholson, 1997; Charalampous, et al., 2022). What this study adds is that these factors not only contribute directly to decreasing emotional exhaustion and increasing task performance but also influence how teleworkers react to work from home, influencing the emergence of work overload. Hence, the combination of these three factors is essential to understanding the individual's adjustment to telework. For instance, recently, Mihalca et al. (2021) showed that home/family, job, and organizational factors influenced work overload which in turn significantly decreased task performance and telework satisfaction. Similarly, Charalampous, et al. (2022) also evidenced that work-life interference, flexibility, and organizational trust contributed to decrease or increase work overload which in turn accounted for performance.

Moreover, self-leadership may act as a resource allowing individuals to regulate their behavior, and develop personal effectiveness. Individuals with higher levels of self-leadership tend to set specific goals at work, monitor performance, and are also aware that their negative thoughts can influence their performance. This type of behavior proved to be important in increasing performance, which may be a good indicator for organizations concerned about achieving higher productivity rates. However, the results also indicate that these workers tend

to develop higher levels of emotional exhaustion, which will impair their mental health. These findings may indicate that, beyond a certain level, self-leadership may be emotionally counterproductive. Being aware of one's performance, by monitoring it regularly, may contribute to emotional exhaustion, despite being a factor explaining why task performance is fostered (e.g., Xanthopoulou et al., 2007). Hence, self-leadership as a resource may be relevant to improving positive behaviors at work but negative as it may increase the likelihood of experiencing emotional exhaustion. When individuals are completely immersed and focused on work and on their effectiveness, they may lose their awareness of domains other than work, allowing themselves to be immersed in the achievement of goals (for instance, working after hours), and developing feelings of emotional exhaustion without being properly aware of it, and thus, creating an imbalance between the telework context and their mental health.

Thus, from a business perspective, organizations that adopt telework should restructure and adapt their internal policies (Khor & Tan, 2022). For instance, training self-leadership in workers, and recruiting individuals with high levels of this characteristic. At the same time, organizations must pay attention to these workers' mental health levels of these workers, as they appear to be more vulnerable to emotional exhaustion. Therefore, organizations should regularly diagnose emotional exhaustion, and implement organizational support practices (e.g., support and resources) for their workers to accomplish their goals and to help them deal with their work demands.

At last, it is important to consider that there was a change in the role of work overload across studies. While in Study 1, work overload leads to diminished performance, in Study 2 this relationship became positive, that is work overload increases performance. This means that individuals may have adapted to telework during confinement and developed the ability to cope with the increased intensity inherent to telework. Or from a social cognitive

perspective, they may have learned to be more effective in telework, thus knowing how to effectively deal with and react to work intensification or working after hours.

## **5.2. Practical implications**

The results observed in this study present important practical implications for organizations and their stakeholders. First, from an organization's perspective, several factors lead to the successful implementation of telework, maximizing the results for the company and simultaneously workers' well-being. Certain basic conditions must be assured, for instance, providing computer systems and structures, and formal guidelines, accessible to all members, which clarify the expectations and conditions of this regime.

The results reveal some insights that may influence the restructuring of organizational policies for companies to transition to a new way of working. The existence of a trusting relationship between teleworkers and their superiors proved to be a critical factor for the success of telework, and therefore, organizations should invest in procedures that foster the quality of this relationship. Supervisors must adopt a fair and equitable attitude (not discriminating or giving less support to teleworkers than to office employees), regularly evaluate teleworkers' performance based on their actual results (and not on the increased time spent face-to-face) and, above all, encourage frequent communication with their employees (Varna, et al., 2022a). This communication should be both formal and informal and occur at the individual and team levels. Thus, supervisors should be present and available to help and support work processes, and regularly create moments that promote team cohesion and spirit (Varna et al., 2022b).

The results also show that work-life interference is the dimension of telework with the greatest influence on emotional exhaustion and task performance. Teleworkers need to be able to separate and manage the boundaries between the professional and family domains, to avoid overlap, which could lead to negative results. For this reason, managers should raise their

teleworkers' awareness and encourage them to adopt practices to establish concrete boundaries (Lim, 2022). Teleworkers who have developed strategies, such as the use of a specific dress code for work (e.g., clothes, makeup, and specific accessories), placing signs or posters on the door of the room used as a workspace, planning, and organizing the work and respective breaks in advance, and creating task lists (e.g., Grant et al., 2013), appear to be more able to separate the two domains.

However, in this case of telework in confinement, and telework in general, no matter how many guidelines the organization may suggest, this is something that depends on the individual, taking his family dynamics and the resources at hand into account. From this point of view, the organization can develop training policies and provide support to employees (e.g., coaching, and other types of psychological support or individual development, through intervention programs). These programs should be directed toward occupational health, allowing workers to develop their personal resources, as tools to deal with this work regime.

Based on the above, we suggest adjustments and improvements to organizations' internal processes. Considering that telework will become a stable work regime, it is important to readjust some points in the recruitment processes regarding profiles that work better than others in a telework regime. For instance, resilience, autonomy, proactivity, and strategies to deal with less interaction are relevant characteristics for someone in telework. Recruiters must assess these types of characteristics in candidates, and at the same time, analyze the person's availability for telework, given the involvement needed to deal with the demands of this regime.

Finally, regarding the intensity of telework, the results obtained, highlight the importance of doing it partially, or occasionally, instead of full-time (in situations of non-confinement) (Gajendran & Harrison, 2007). Limiting the frequency of telework reduces the exposure to its risks and gives, the teleworker, the opportunity to maintain the connection

with the corporate culture, colleagues, and superiors. Furthermore, social isolation is prevented, as these workers have more regular contact and physical meetings with their team members. Thus, it is suggested that organizations should encourage telework for about two or three days a week (e.g., Fonner & Roloff, 2010).

### **5.3. Limitations and future research**

Despite the positive features of these two studies, there are some limitations. First, both studies are cross-sectional, so we cannot infer causality or determine changes in the variables under study. Although we made the study in two distinct periods (but with different samples), we suggest longitudinal studies to establish more robust causal associations between the variables and investigate how these effects vary over time.

Second, we relied on self-reported measures. Although the internal consistency of the scales is high, the assessment of subjective experiences tends to lead to common method bias, which may artificially influence the relationships between variables. For this reason, future studies should resort to other sources, such as measures reported by others (e.g., evaluations by superiors).

The fact that the study was developed during a pandemic and more specifically, during the phase of mandatory confinement, may have influenced these results. Thus, future studies should test the model, in a less turbulent context and analyze other conditions, for instance, the telework regime (part-time or optional). Further research should explore the role of individual differences (e.g., psychological capital, affectivity) to develop strategies and tools that may help workers to cope with the harmful effects of telework.

Finally, given the central importance of the leader in the performance of teleworking teams, we propose the study of their behavior, which may have a positive impact on the adoption of this work regime.

## Conclusions

This research explains how and when telework is related to emotional exhaustion and task performance. Results from the first study indicated that work overload was a mediator between the three dimensions of telework (work-life interference, flexibility, and organizational trust) and emotional exhaustion and task performance. That is, when workers perceived telework more positively, they tended to not feel overloaded which in turn translated into lower levels of emotional exhaustion and higher levels of task performance. The second study demonstrated that self-leadership moderated the indirect effect of work overload on the relationship between telework and emotional exhaustion, in such a way that workers who scored higher on self-leadership tended to show higher levels of emotional exhaustion (when compared to those lower on self-leadership). This was not significant for task performance, even though self-leaders showed higher levels of task performance (when compared to lower levels).

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