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# Do recovery experiences moderate the relationship between workload and work-family conflict?

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## Abstract

**Purpose** – The purpose of this paper is to investigate the role of four recovery experiences (psychological detachment from work, relaxation, mastery, and control) in preventing work-family conflict (WFC). Specifically, on the basis of WFC and recovery theories the authors hypothesized that workload would be positively related to WFC, and that recovery experiences would moderate this relationship.

**Design/methodology/approach** – The research involved 597 Italian employees (on pay-role or self-employed) from different occupational sectors. Participants filled-in an on-line questionnaire. Moderated structural equation modelling were used to test the hypotheses.

**Findings** – Results showed a positive relationship of workload with WFC. Regarding the hypothesized interaction effects, the relationship between workload and WFC was particularly strong under condition of low (vs high) psychological detachment, low relaxation, and low control.

**Originality/value** – This study highlights the beneficial role of recovery experiences in preventing the spillover of workload to the family domain, showing their moderating effects for the first time. These findings have several implications for both future research and practitioners.

**Keywords** Work-family conflict, Psychological well-being, Recovery experiences, Workload

**Paper type** Research paper

## Introduction

The job demands in modern organizations, combined with an increasing permeability of organizational boundaries, have increased the relevance of research on the relationship between work and family domains (Voydanoff, 2005). Many scholars have recognized various additional changes that have necessitated the study of the work-family interface: the intensification of female employment, the growth of the number of “dual-career” couples and single-parent families (Magee *et al.*, 2012), and the influence of the information era on work practices (MacDermid, 2005). Within this framework, Italy represents a peculiar context, characterized by increased job pressures and job insecurity that interfere with the private life, and a limited externalization of care, with a major role played by the traditional family through informal help (Naldini and Saraceno, 2011). In order to cope with this situation, it seems relevant to continue investigating the



work-family conflict (WFC) dynamics, trying to understand which dimensions can support workers in dealing with work- and family-related requests and responsibilities.

Particularly, this study takes into account the recovery, defined as the process during leisure time of reducing the physical and psychological symptoms that can occur after a stressful working event (Meijman and Mulder, 1998). The four recovery experiences considered by the study, psychological detachment, relaxation, mastery, and control, represent personal strategies that have the potential to promote recovery and allow for replenishment of used personal resources and/or building new resources (Sonnentag and Fritz, 2007).

In response to calls for research on the link between WFC and recovery (Sanz-Vergel *et al.*, 2010), the present study integrates the WFC and recovery from work stress literatures to better understand which role recovery experiences may play in mitigating the positive relationship between job stressors (in this case, workload) and WFC. Specifically, the central goals of the study are to investigate whether workload interferes with family life, and whether recovery experiences (Sonnentag and Fritz, 2007) can moderate this relationship.

Recovery from work has been linked to different well-being outcomes, such as burnout, sleep quality, work engagement, positive mood, and low fatigue (e.g. Kinnunen *et al.*, 2011; Sonnentag and Bayer, 2005); nevertheless, few studies have considered the role of recovery as a mechanism through which job stressors relate to the non-work domain. Moreover, this is the first study which investigates the buffering role (recently underlined by Sonnentag and Fritz, 2015) of all the four recovery experiences in the relationship between workload and WFC.

### *The Italian cultural context*

In the last decades, the Italian labour market has been characterized particularly by an increase of both women involvement and flexible or atypical forms of job contracts (full- or part-time, regarding mainly women). Above all, these changes have concerned young and highly qualified generations. This flexibilization is occurring in a stiff labour market, characterized by a lack of opportunities: the fragmented careers are more frequent nowadays, but employers regard them with suspicion (Bertolini, 2011; Gallino, 2014; Naldini and Saraceno, 2011). Therefore, within this scenario, when individuals have a job, whether precarious or permanent, they tend to work in an intensive way, in order to increase their opportunities to be visible and considered an added value by their employers.

Also for those individuals who have more traditional job contracts (namely permanent contracts), past research indicated an increasing of pressures and requests during the last years, particularly for more qualified workers. In order to react to this situation, a phenomenon of work intensification occurred, which leads individuals to work more hours, both at the office and at home, with potential spillover effect from work to the private and familial life (Burchell *et al.*, 2005; Naldini and Saraceno, 2011).

Moreover, the recent crisis, started in 2008 in the USA, has rapidly reached Europe with a significant impact also in Italy, as in the South, where the level of employment is low by tradition, as in the North (Di Quirico, 2010). Particularly, the crisis contributed to an increase in unemployment, job and economic insecurity, and finally work intensification for employed people.

Regarding the culture in support of a balance between work and family, and the related services, in Italy the externalization of care is limited, the role of the family is considered essential, informal help regarding the care for young children is very important (Poelmans, 2005) and the traditional family is expected to take care of the welfare of

relatives (Naldini and Saraceno, 2011). A formal support to sustain people with children – considered more in danger of poverty than others – does not exist, and it is difficult to have access to children care services (Del Boca, 2002). For these reasons, it seems very important to study more extensively work-family interface topics in this country, in order to develop new policies and support workers in managing their life domains.

In relation to models of work-life balance, a change is occurring in Italy. Some research highlighted a lack of gender differences in perceptions of WFC (Colombo and Ghislieri, 2008); these findings would indicate that work interferes with familial life in a similar way for men and women, although women are generally the major responsible for care of the family. Sociological studies underlined that the women's familial role, in Italy, is so expected to generate low WFC (Naldini and Saraceno, 2011), even when pace of life is very demanding and recovery opportunities are limited. Nevertheless, this situation is under transformation: whether the rate of men participation to the children care was the lowest in the 1980s in Italy, it grew in the last years (Bruzzese and Romano, 2006; Naldini and Saraceno, 2011).

In conclusion, the interweaving of a weak labour market, poor public investment aimed at supporting the work-family balance, and a high use of communication technologies without policies to limit their utilization (e.g. prohibition to use e-mail or call during the weekend) contributes to foster the tendency to work more and/or to have frequent thoughts and concerns about work, also in the extra-work time.

### *WFC*

The work-family interface is characterized by a process in which one's functioning and behaviour in one domain is influenced by quantitative and qualitative demands and resources from the other domain (Bakker *et al.*, 2011; Demerouti *et al.*, 2010). While other theoretical models have been used to understand the work-family interface (compensation, instrumentality, integration/segmentation, role identity, and balance; Ghislieri *et al.*, 2011; O'Driscoll *et al.*, 2006), the conflict perspective has dominated work-family studies for nearly two decades (1980s and 1990s).

The WFC model originates from role theory (Merton, 1957) and from Goode's (1960) role strain hypothesis. In their classic paper, Greenhaus and Beutell (1985) define WFC as: "a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. That is, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role" (p. 77). To explain the WFC construct the authors recall the role conflict theories elaborated in the 1960s by Kahn *et al.* (1964). These theories focus on the possible conflicts – which the person is not able to face – among expectations and requests coming from various roles (Kahn *et al.*, 1964). The sources of the pressure may be due to time issues, but may also derive from different kind of stressors or from incoherent behavioural requests. From work-family and family-work perspectives, this type of conflict reflects the degree to which role responsibilities from the work and family domains are incompatible; as such, the demands of one role make performance of the other role more difficult (Katz and Kahn, 1978).

This study focuses only on the negative side of the work-family interface, namely WFC, taking an organizational point of view and considering especially time- and strain-based WFC. Time-based WFC refers to the fact that the time and attention devoted to work hinders performance in the family domain; strain-based WFC occurs when strain and tension created by the work role interferes with performing family responsibilities (Michel *et al.*, 2011; Netemeyer *et al.*, 1996). Several studies have shown

a negative relationship between WFC and job satisfaction (Cortese *et al.*, 2010), physical and psychological well-being (Amstad *et al.*, 2011; Magee *et al.*, 2012), and a positive relationship with absenteeism, and intentions to change jobs (Allen *et al.*, 2000).

The first aim of this study is to investigate the relationship between WFC and its causes, starting from the point that previous studies identified job demands as the principal antecedents of WFC (Byron, 2005; O'Driscoll *et al.*, 2006). Ten Brummelhuis and Bakker (2012) argued that WFC is the result of a process whereby work demands deplete personal resources and impede accomplishments in the family domain.

Therefore, the first study hypothesis aims at investigating the relationship between a type of job demand that has been found to be important in many occupational groups, namely workload (Bakker and Demerouti, 2007), and WFC, assuming that when requests coming from work are too high, individuals cannot switch off from the work domain; instead, they continue to work and think about work also during their off-job time. On the basis of WFC theory, we argue that workload leads to WFC to the extent that individuals bring their work home, or cannot stop thinking about work subtracting time and energies from activities with their families:

*H1.* Workload is positively related to WFC.

#### *Recovery experiences and WFC*

Recently, some scholars highlighted the importance of investigating the relation between WFC and recovery, in order to better understand its dynamics and its implications (Demerouti *et al.*, 2007; Sanz-Vergel *et al.*, 2010). "Recovery refers to a process during which individual functional systems that have been called upon during a stressful experience return to their prestressor levels" (Sonnentag and Fritz, 2007, p. 205). When recovery is not sufficient, individuals have to put in extra effort at work to maintain a satisfactory performance level, which may inflict strain and in the long term lead to health problems (Kinnunen *et al.*, 2011; Meijman and Mulder, 1998).

Sonnentag and Fritz (2007) referred to the Effort-Recovery Model (Meijman and Mulder, 1998), the Conservation of Resources Theory (Hobfoll, 1998) and the mood regulation literature (Fuller *et al.*, 2003) to develop an understanding of successful recovery experiences. According to the Effort-Recovery Model (Meijman and Mulder, 1998), effort expenditure at work leads to load reactions such as fatigue or physiological activation. Consistent with this model, a precondition for recovery is that the functional systems strained during work will not be called upon any longer. If no adequate recovery takes place after work, stress-related load reactions do not return to prestressor levels leading to chronic health impairment (Geurts and Sonnentag, 2006).

The Conservation of Resources Theory (Hobfoll, 1998) assumes that people strive to obtain, retain, and protect their resources, since stress occurs when an individual's resources are threatened or lost. Resources can be external entities as well as internal attributes such as personal characteristics; stress recovery on a day-to-day basis particularly refers to internal resources such as energy or positive mood. Stress threatens these resources and as a consequence may harm health and well-being. Therefore, to recover from stress, individuals have to restore their resources and gain new internal ones such as energies, self-efficacy or positive mood (Sonnentag and Fritz, 2007). Finally, Sonnentag and Fritz (2007) referred to mood regulation theories (Fuller *et al.*, 2003) which state that mood repair is one of the core functions of recovery and indicate diversionary strategies and engagement strategies as mood regulation strategies (Parkinson and Totterdell, 1999).

Recovery can be achieved through some off-job activities – specifically social, low-effort and physical activities – that allow for replenishment of used personal resources and/or building new resources (Ten Brummelhuis and Bakker, 2012). On this basis, Sonnentag and Fritz (2007) introduced four recovery experiences, namely psychological detachment, relaxation, mastery, and control, which represent personal strategies that have the potential to promote recovery. Psychological detachment and relaxation imply that an employee avoids activities in the extra-work time that call upon the same functional systems, or internal resources as those required at work. Mastery and control imply that an employee gains new internal resources to restore endangered resources (Sonnentag and Fritz, 2007).

Specifically, psychological detachment represents the cognitive disengagement from work during off-job time. It means that an individual stops thinking about work and being occupied by work-related affairs and problems when he is not at work. Relaxation is a process generally associated with leisure activities. It refers to feeling calm and peaceful, and it is characterized by a state of low activation and increased positive affect (Sonnentag and Fritz, 2007).

Mastery refers to pursuing off-job activities that distract from the job by providing challenging experiences and opportunities to learn new skills in domains different from own job. Although mastery experiences may impose additional demands, they challenge the individual without overtaxing his or her capabilities since they help to build up new internal resources such as skills, competencies, self-efficacy, and positive mood (Sonnentag and Fritz, 2007). Control applied to leisure time refers to the degree to which an individual can decide which activity to pursue, when, and how to pursue this chosen activity in the leisure time. According to Sonnentag and Fritz (2007), the experience of control is associated with positive reactions, and may increase self-efficacy and feelings of competence. In addition, control during leisure time offers the individual the opportunity to choose those specific activities that may be especially supportive for him or her for the recovery process.

Some studies demonstrated that insufficient recovery may cause strain and in the long term lead to health problems and burnout (Kinnunen *et al.*, 2011; Meijman and Mulder, 1998; Sonnentag and Bayer, 2005). Moreover, recovery experiences, especially psychological detachment, are related to positive mood and low fatigue (Sonnentag and Bayer, 2005). Specifically, recovery in the evening (Sonnentag and Bayer, 2005), in the weekend (Fritz and Sonnentag, 2005), or during vacation (Westman and Etzion, 2001) can increase individual well-being and job performance. Furthermore, two recent studies have demonstrated the buffering role of recovery on the relationship between first, WFC/family-work conflict and each of psychological strain and life satisfaction (Moreno-Jiménez *et al.*, 2009), and second, furloughs and each of emotional exhaustion, performance, and organizational citizenship behaviour (Halbesleben *et al.*, 2013). Finally, Kinnunen *et al.* (2011) proposed an extension of the job demands-resources model (Bakker and Demerouti, 2007, 2014) considering the mediational role of the recovery experiences between job demands and resources on the one hand, and fatigue at work and work engagement on the other hand.

A few studies have investigated the relationship between recovery and WFC so far, but the interest for this topic is growing in the last years (Sanz-Vergel *et al.*, 2010). Research, indeed, is focusing on the fact that demands coming from work and family domains are not necessarily negative if individuals have the opportunity to recover from the efforts spent to meet them (Meijman and Mulder, 1998). Derks and Bakker (2014) in their diary study found an interaction effect between frequency of smartphone

use and two recovery experiences: detachment and relaxation attenuated the impact of frequent smartphone use on work-home interference. Sanz-Vergel *et al.* (2011) found that detachment during the evening predicted low levels of work-home interference. Demsky *et al.* (2014), using multisource data, found that psychological detachment mediated the relationship between workplace aggression and both self- and significant other-reported WFC.

The present paper aims at addressing a gap in the literature, considering for the first time the moderating role of the four recovery experiences in the relationship between workload and WFC. Sonnentag and Fritz (2015) have recently indicated an extended stressor-detachment model that considers a moderator role of psychological detachment between job stressors and impaired well-being. We want to extend this model, considering all the four recovery experiences (namely psychological detachment, relaxation, mastery, and control) in relation to WFC.

Therefore, in this study we hypothesize a moderating role of recovery experiences between workload and time- and strain-based WFC. Literature showed that job demands are positively related to WFC unless individuals have sufficient resources (Bakker *et al.*, 2011). Since previous studies have investigated the moderational role of job resources within this relationship (e.g. Bakker *et al.*, 2011), in this research we focus on the role of those experiences that allow individuals to restore energetic resources and generate new ones during leisure time. Specifically, when workload is high it could impact workers also outside of the work domain; whether individuals have insufficient resources with which to approach work- and family-related tasks and responsibilities, the consequences for the private and familial life will be more negative. The recovery experiences give individuals the opportunity to generate these needed resources; thus, under high levels of recovery experiences, the relationship between workload and WFC should be weaker than under low levels of recovery experiences:

- H2.* (a) Psychological detachment, (b) relaxation, (c) mastery, and (d) control moderate the relationship between workload and WFC. Specifically, the relationship between workload and WFC will be stronger for individuals who experience low (vs high) psychological detachment, relaxation, mastery, and control.

## Method

### *Procedure and participants*

Data collection took place between 2012 and 2013. The participants in the present study were employed or self-employed in several different sectors. This heterogeneity increases the chances of finding meaningful variation in work-related experiences (Warr, 1990). In order to inform people about the research and collect voluntary subscriptions we involved some preferential contacts working in several sectors, asking them to contact and inform other colleagues (snowball sampling). Then we contacted 1,001 workers via e-mail explaining to them the research methods and purposes, and providing clear instructions for the compilation of the self-report on-line questionnaire. In the e-mail the voluntary and not paid participation to the research, and the anonymity and confidentiality of the data were emphasized. We obtained a response-rate of 60 per cent.

The sample of 597 workers consisted of 335 females (56 per cent of the sample) and 262 males (44 per cent of the sample). The mean age was 40.36 (SD = 9.43). Among the participants, 60 per cent were married or cohabited; 48 per cent had children. Regarding

educational level, 75 per cent had a bachelor's or master's degrees, the others had a lower level of education.

In total, 56 per cent were employees and 44 per cent were self-employed workers. Participants were active in various occupational sectors: most of them (42 per cent) were from the private service, 13 per cent were from industry, 10 per cent were from public health, 9 per cent were from education and research, 9 per cent were from public service, 6 per cent were from commerce, 5 per cent were from other sectors (missing cases = 6 per cent). Weekly working hours were, on average, 41.99 (SD = 10.77). Mean seniority on the job was 12.58 years (SD = 9.53).

### *Measures*

WFC was assessed by the Italian version (Colombo and Ghislieri, 2008) of the five-item scale developed by Netemeyer *et al.* (1996). An example item is "The demands of my work interfere with my home and family life". The participants could react to the statements using a six-point frequency scale (1 = never, 6 = always). The reliability of the scale was sufficient. Cronbach's  $\alpha$  was 0.91.

Recovery experiences were assessed using the 16-item scale developed by Sonnentag and Fritz (2007). The original items were translated to Italian; subsequently, a native-speaking professional translator performed back-translation which was compared with the original English version of the items (cf. Beaton *et al.*, 2000). Confirmatory factor analysis confirmed the four-factor structure of the Italian version of the scale ( $\chi^2(95) = 561.70$ ; CFI = 0.94; TLI = 0.92; RMSEA = 0.08; SRMR = 0.06). The scale used four items for each factor: psychological detachment (e.g. "During time after work I forget about work"; Cronbach's  $\alpha$  was 0.91); relaxation (e.g. "During time after work I do relaxing things"; Cronbach's  $\alpha$  was 0.89); mastery (e.g. "During time after work I do things that challenge me"; Cronbach's  $\alpha$  was 0.90); and control (e.g. "During time after work I decide my own schedule"; Cronbach's  $\alpha$  was 0.89). Participants could react using a five-point Likert scale (1 = totally disagree, 5 = totally agree).

Workload was measured by four items taken from Bakker *et al.* (2004) and used in a previous Italian study (Molino *et al.*, 2013a). An example item is "How often do you have to work extra hard in order to reach a deadline?" (1 = never, 5 = always). Cronbach's  $\alpha$  was 0.81.

Similar to previous research, we included several variables as controls that have been related to WFC in the past (e.g. Carlson, 1999). Control variables were gender (1 = female, 0 = male), having children (1 = yes, 0 = no), and age.

### *Strategy of analysis*

The statistical package PASW 18 was used for descriptive analysis (mean and standard deviation), internal consistency of each scale and to analyze the correlations among variables through Pearson's coefficient. The Mplus 7 software package (Muthén and Muthén, 1998-2012) was used to test moderated structural equation modelling (MSEM). The method of estimation was maximum likelihood. According to the literature (Bollen and Long, 1993) several goodness-of-fit criteria were considered: the  $\chi^2$  goodness-of-fit statistic; the root mean square error of approximation (RMSEA); the comparative fit index (CFI); the Tucker Lewis index (TLI); the standardized root mean square residual (SRMR). Values of both RMSEA and SRSM lower than 0.08, and CFI and TLI values greater than 0.90 indicate a good fit. We controlled for gender, having children, and age in all analyses.

To apply MSEM, the procedure described by Mathieu *et al.* (1992; in Cortina *et al.*, 2001) was used. For each hypothesized interaction effect we tested a model that

included three exogenous variables (workload, one of the four recovery experiences and their interaction term) and WFC as endogenous variable. Each exogenous variable had only one indicator, which was the standardized score of the respective variable. The indicator of the interaction factor was the multiplication of the indicators of the interacting variables. The path from each latent exogenous variable to its indicator was fixed at the square root of the scale reliability, whereas the error variance of each indicator was set equal to the product of its variance and one minus its reliability. The reliability of the interaction term was calculated by the formula reported in Cortina *et al.* (2001). The workload variable and the recovery experience variables were allowed to correlate, while the correlations between them and their interactions were expected to be zero (Cortina *et al.*, 2001).

**Results**

*Descriptive statistics*

Table I includes the means, standard deviations, and correlations between the study variables. Results showed a significant positive correlation between WFC and workload. Moreover, a significant negative correlation between WFC and the four recovery experiences emerged, lower in the case of mastery.

A confirmatory factor analysis was performed using the Harman’s single-factor test (Podsakoff *et al.*, 2003), in order to address the common method variance issue. If common method variance were a serious problem, we would expect a single factor to emerge from a factor analysis (Podsakoff and Organ, 1986). Results indicated that one single factor could not account for the variance in the data, since all measures of goodness-of-fit indicated that the model did not fit the data ( $\chi^2(275, n = 597) = 7062.38, p < 0.001, RMSEA = 0.20, CFI = 0.36, TLI = 0.30, SRMR = 0.17$ ). This indicates that common method variance was not a major issue in the present study.

*Test of the hypotheses*

Table II shows the results of MSEM with WFC as dependent variable and workload, one of the four recovery experiences and their interaction term as independent variables. Results support *H1*, since workload shows a positive and significant relationship with WFC in the four models.

As regards the moderating effects of recovery experiences between workload and WFC, three out of four interaction effects were statistically significant. Results

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. WFC	0.91								
2. Workload	0.52**	0.81							
3. Psych. detachment	-0.30**	-0.22**	0.91						
4. Relaxation	-0.27**	-0.13**	0.57**	0.89					
5. Mastery	-0.19**	-0.06	0.22**	0.47**	0.90				
6. Control	-0.25**	-0.12**	0.22**	0.48**	0.51**	0.89			
7. Age	0.03	-0.05	0.01	-0.07	0.05	-0.03	-		
8. Gender (F)	-0.01	-0.06	0.01	-0.11**	-0.14**	-0.04	-0.13**	-	
9. Children (yes)	0.04	-0.02	-0.02	-0.27**	-0.18**	-0.24**	0.49**	-0.04	-
M	3.38	3.57	2.97	3.30	3.24	3.42	40.36	-	-
SD	1.23	0.79	1.13	1.01	1.03	1.02	9.43	-	-

Notes:  $n = 597$ . \* $p < 0.05$ ; \*\* $p < 0.01$

**Table I.**  
Means, standard deviations, Cronbach’s  $\alpha$ , and correlations among study variables

**Table II.**

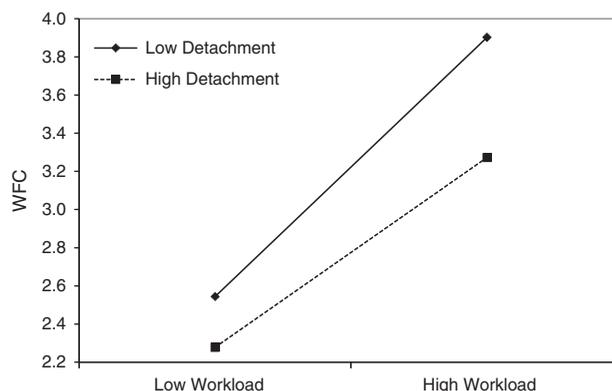
Results of MSEM analysis: interaction effect of the four recovery experiences on the relation between workload and WFC

Predictor	WFC		$\chi^2$	CFI	TLI	Fit			$\Delta\chi^2$	<i>p</i>
	UPC (SE)	SPC				RMSEA	SRMR			
Workload	0.59 (0.05)	0.55***								
Detachment	-0.22 (0.05)	-0.20***								
Workload × detachment	-0.09 (0.04)	-0.10*								
<i>R</i> <sup>2</sup>	40%		4.47	0.99	0.99	0.01	0.02	5.16	0.02	
Workload	0.59 (0.05)	0.56***								
Relaxation	-0.25 (0.04)	-0.23***								
Workload × relaxation	-0.07 (0.04)	-0.08*								
<i>R</i> <sup>2</sup>	41%		13.99	0.99	0.97	0.06	0.03	3.91	0.04	
Workload	0.60 (0.05)	0.57***								
Mastery	-0.21 (0.04)	-0.20***								
Workload × mastery	-0.03 (0.04)	-0.03								
<i>R</i> <sup>2</sup>	38%		16.21	0.99	0.96	0.07	0.02	0.62	0.43	
Workload	0.59 (0.05)	0.56***								
Control	-0.23 (0.04)	-0.22***								
Workload × control	-0.08 (0.04)	-0.09*								
<i>R</i> <sup>2</sup>	40%		4.57	0.98	0.95	0.08	0.03	7.59	0.01	

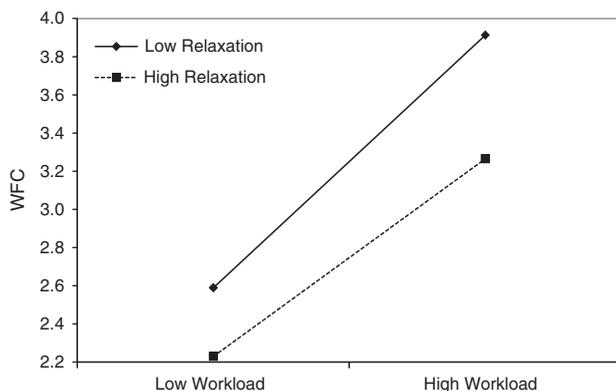
**Notes:** *n* = 597. The *df* of all models is 4. UPC, unstandardized path coefficient; SPC, standardized path coefficient;  $\Delta\chi^2$ , comparison between models without the path from the latent interaction variable to the endogenous variable and models with this path. \**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001

showed that workload interacted with psychological detachment, relaxation, and control to predict WFC; mastery did not have an effect on the relationship between workload and WFC.

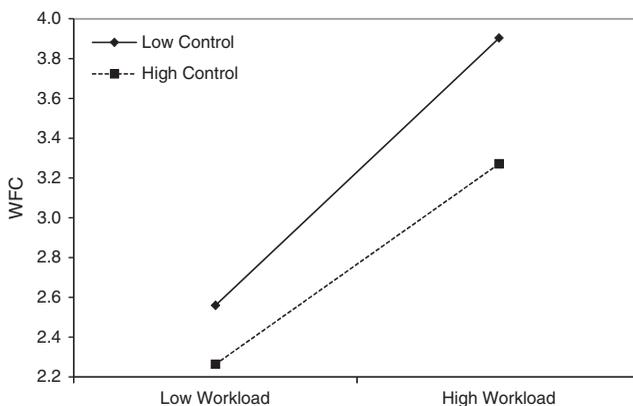
In cases where the MSEM analyses resulted in a significant interaction effect, the  $\chi^2$  difference test showed that the fit of the models with the path from the latent interaction variable to the endogenous variables was significantly better than the models without this path (see Table II), thus further supporting the interaction effects (Cortina *et al.*, 2001). Dawson and Richter's (2006) software was used to plot the three significant moderation effects. Figures 1-3 show the direction of the interaction effects. In the three situations, recovery experiences mitigated the positive relationship between workload and WFC, which means that the positive relationship between workload and WFC is particularly high under conditions of low (vs high) psychological detachment, relaxation, and control. Therefore, *H2a*, *H2b*, and *H2d* were supported.



**Figure 1.**  
The interaction effect of psychological detachment on the relationship between workload and WFC



**Figure 2.**  
The interaction effect  
of relaxation on the  
relationship between  
workload and WFC



**Figure 3.**  
The interaction effect  
of control on the  
relationship between  
workload and WFC

## Discussion

The present study aimed to contribute to the WFC literature by investigating the relationship between workload, WFC, and recovery experiences. Specifically, our research had two main goals: first, to test if there is a positive relationship between workload and WFC and second, to investigate the moderating effects of four recovery experiences (Sonnentag and Fritz, 2007) on this relationship, addressing a gap in the literature that has not considered the buffering role of the four recovery experiences in the non-work domain dynamics so far.

Results of MSEM confirmed that high workload is positively related to WFC, in line with literature that identified requests coming from the job as principal antecedents of WFC (Byron, 2005; Heponiemi *et al.*, 2008; O'Driscoll *et al.*, 2006; Ten Brummelhuis and Bakker, 2012). A previous study by Bakker *et al.* (2011) has shown that the combination of high job demands and low job resources is predictive of work-home interference, focusing on the moderating role of job resources, consistently with previous studies (e.g. Xanthopoulou *et al.*, 2007). Our study question was to understand whether experiences which permit to restore and gain new resources during leisure time can also buffer the positive relationship between job demands, specifically workload, and WFC.

As regards the relationship between workload and WFC, the buffering hypothesis was supported in the case of three out of four recovery experiences: in presence of high

workload, WFC is lower for those workers who experience more psychological detachment, relaxation, and control in their leisure time. It follows that the three recovery experiences, allowing individuals to restore resources lost during the working day and to gain new resources that can be spent in the family domain, reduce the positive effect of workload on time- and strain-based WFC.

We already knew from literature that the opportunity to recover from stress expenditure and generate new resources during leisure time is essential to improve the levels of life satisfaction and well-being (Sonnetag and Fritz, 2007), and to have better performance at work (e.g. Binnewies *et al.*, 2009; Meijman and Mulder, 1998). The present study findings enhance our understanding about the role of recovery in the non-work domain. Particularly, the study confirmed that experiences such as psychological detachment, relaxation, and control after work allow individuals to restore and/or generate the resources needed to cope with workload in a way that mitigate its positive effect on WFC perception.

The moderating hypothesis was not confirmed for mastery; thus mastery does not have a buffering effect on the relationship between workload and WFC. Mastery is a recovery strategy that helps employees focus on something outside their work and increase their perceptions of personal accomplishment. According to Sonnetag and Fritz (2007, p. 206), "Mastery experiences refer to off-job activities that distract from the job by providing challenging experiences and learning opportunities in other domains". Therefore, mastery represents a unique recovery experience as it may require some self-regulatory effort in order to learn new things or take on a challenge. Mastery experiences such as learning a new language are theorized to help individuals recover because they help to build up new internal resources such as skills, competencies, and self-efficacy. However, it is conceivable that these internal resources are so specific and unrelated to work activities (e.g. mastery of the Chinese language) that the resources cannot help employees to cope with their high job demands. Moreover, the mastery experiences, providing challenging opportunities to learn new things, allow the individual to gain new resources but, simultaneously, impose additional demands (Sonnetag and Fritz, 2007). Therefore they seem to interfere with the family domain and do not have a buffering effect on the relationship between job demands and WFC.

In the Italian context, characterized by increased job pressures and time dedicated to work on the one hand, and restricted resources allocated to services supporting work-family balance on the other hand (Del Boca, 2002; Naldini and Saraceno, 2011), it seems particularly relevant to understand which personal processes may support individuals in dealing with different and conflicting requests. Although the significant moderation effects we found do not appear to be strong, the study findings confirmed that is essential for Italian workers, who operate in a context characterized by few external resources and support, activate processes able to reinforce their personal resources in order to cope with the high demands and requests coming from different domains. These results can be considered a starting point to address future research and interventions focused on the development and reinforcement of best practices which allow workers to answer in an adequate way to the high job labour expectations, controlling for negative consequences on their private, and familial life.

From a theoretical perspective, in order to deepening the investigation of the relationships between job demands, WFC, and recovery experiences, future research should also consider the relationship between specific kind of WFC (strain- or time-based, and also behaviour-based, an aspect not considered in the present study), specific job demands and specific recovery experiences, hypothesizing also a mediational role of

recovery experiences, to determine whether they might be affected by the events at work (Sonnentag and Fritz, 2015). Moreover, in the future, it will be important to investigate the relationship between recovery process and family-work conflict, to understand the role of requests coming from the family domain. Finally, the relationships and dynamics between work-family enrichment and recovery should be investigated, in order to consider the positive side of the work-family interface.

### *Limitations*

The present study has some limitations. A first limitation is the cross-sectional nature of the study, which excludes the possibility to draw any conclusions in terms of causal effects in the relationships tested. Moreover, results mainly concern variables which are considered correlational in nature (Stone-Romero and Rosopa, 2008). Future longitudinal research or diary studies are needed to extend the present findings and verify causality (Kinnunen *et al.*, 2011). For this purpose, also reversed and reciprocal effects between study variables should be considered.

A second limitation is the use of single-source self-report data, which raises questions about common method bias (Podsakoff *et al.*, 2003). Although the model variables did not show high overlap, it would be advisable to use other data sources, including supervisors, colleagues, and family, as well as objective ratings.

Finally, the study used a heterogeneous convenience sample of employees and self-employed workers. Therefore, we should be cautious with generalizing the results. On the positive side, however, we could consider results found applicable to different occupational contexts and professions, and not only to specific ones. Nevertheless, study hypotheses should be replicated in specific organizations and working places, in order to identify more contextualized conclusions and practical implications.

### **Conclusion**

This study highlights the beneficial role of recovery experiences in the relationship between workload and work-family interface. This finding has theoretical and practical implications. As regards practical implications, several studies have shown that interventions to reduce WFC are relevant to promote individual and organizational well-being (Allen *et al.*, 2000; Amstad *et al.*, 2011; Magee *et al.*, 2012). Facilitating recovery experiences represents a relevant intervention in this direction: individuals can be supported to improve their awareness and experience different kind of recovery, according to their personal preferences and needs (Fritz and Sonnentag, 2005).

Organizations, particularly managers and supervisors, should encourage employees to spend their leisure time in non-job-related activities. Moreover, they should encourage and support segmentation practices, to help people to keep their work life separate, as much as possible, from their non-work life (Sonnentag *et al.*, 2010), addressing the implicit norms of unlimited availability. In general, organizations should question the necessity of long-working-hours culture, rather favouring the achievement of specific goals, to support employees finding a healthy work-family balance (Kinnunen *et al.*, 2011). An important issue should regard the use of advanced communication technologies, which may have the potential to contribute to work-life balance, through the flexibilization, since they are used in a considerate and moderate way (Demerouti *et al.*, 2014). Therefore, organizations should find a way to address the utilization of communication devices in the non-work time, also considering the control that employees can have over their connection to work and communication during non-work hours (Ten Brummelhuis *et al.*, 2012).

Previous studies highlighted the importance of making job resources available to individuals, since some of them (e.g. colleagues support, supervisor support, job autonomy) have a positive influence on recovery (Kinnunen *et al.*, 2011). Moreover, workers should have access to different kind of organizational opportunities which permit to gain new resources, such as opportunities for professional development (Molino *et al.*, 2013b), working groups with shared responsibilities, the reduction of hierarchical barriers (Biggio and Cortese, 2013), mentoring and coaching as kind of professional relationships (Molino *et al.*, 2013a).

The described actions may be helpful to prevent or reduce WFC and work-related stress outcomes (Sultana, 2012; Toga *et al.*, 2014). Moreover, it is important to consider that not all individuals are able to recover (Sonnentag, 2003) but that they can learn to do it. Therefore, within organizations, recovery training programmes should be integrated with human resources management practices, in order to foster workers' ability to experience recovery during the working day and leisure time. To improve workers' recovery competence specific training is needed: both team training sessions and group discussion (aimed at describing recovery experiences and activities) and individual counselling (to define and improve personal strategies of recovery) should be provided, with a quali-quantitative results monitoring.

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