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## Work–home enrichment and health: an analysis of the mediating role of persistence in goal striving and vulnerability to stress

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Extant research has shown that work–home enrichment (WHE) generates favorable effects on individuals' work-related and nonwork-related outcomes because of the synergistic combinations realized between work and home lives. In this paper, I explore the link between WHE and self-reported health. Despite this relationship has been already investigated in prior research, scholars have mostly adopted a simplistic approach that directly linked WHE to health, resulting in a limited understanding of what factors are conducive of such positive effects. In this paper, I test a more sophisticated model that link WHE to self-rated health indirectly, through the mediating role of persistence in goal striving and vulnerability to stress. By using data collected through the second follow-up of the National Survey of Midlife Development in the United States (MIDUS II; 2004–2006) and involving a large national sample of working adults, the results show that individuals experiencing high levels of WHE report a better health status because of an enhanced determination to persist in goal striving even when facing difficulties and a lower vulnerability to stress. Implications of these findings for research and practice are discussed.

**Keywords:** adulthood; health; persistence in goal striving; resilience; vulnerability to stress; work–home enrichment

### Introduction

Thought research suggests that positive combinations between the multiple domains of an individual's life generate favorable outcomes for people (Crain & Hammer, 2013; Greenhaus & Allen, 2011; Kempen, Pangert, Hattrup, Mueller, & Joens, 2014; Odle-Dusseau, Britt, & Greene-Shortridge, 2012; Rantanen, Kinnunen, Mauno, & Tement, 2013; Russo & Buonocore, 2012; ten Brummelhuis & Bakker, 2012); recent trends show that because of economic turbulences work–family tensions are increasing for contemporary employees (Fondas, 2014). More specifically, scholars notice that, moved by the desire to show hard-core commitment to the organizations, employees are often reluctant to use flexible policies even they are entitled to do it, resulting in lost productivity, higher stress, enhanced work–family conflict, sleep deprivation and more frequent health disorders. Fortunately, research shows that organizations can help employees to stay healthier at work since through the enactment of positive HR practices and the creation of a work–family supportive culture it is possible to reduce people's susceptibility to stress, promote a more effective management of the work–life interface and increase their well-being (Kossek, Valcour, & Lirio, 2014).

The goal of this paper is to empirically demonstrate the positive effects that work–home enrichment (WHE)<sup>1</sup> generates on employees' resistance to stress and health, and to clarify what are some individual factors that can influence this relationship. Indeed, it is interesting to note that despite numerous studies (e.g. Allis & O'Driscoll, 2008; Grzywacz, 2000;

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Grzywacz & Bass, 2003; Haar & Bardoel, 2008; Hanson, Hammer, & Colton, 2006; Stoddard & Madsen, 2007; Van Steenbergen & Ellemers, 2009; Williams, Franche, Ibrahim, Mustard, & Layton, 2006) have documented the favorable effects of WHE on people's health, research has yet to explore the individual and contextual factors that might intervene in such relationship and that might be conducive for such favorable effects (Van Steenbergen & Ellemers, 2009).

This paper, by relying on the recent *work-home resource model* (ten Brummelhuis & Bakker, 2012), aims at contributing to this issue by testing an indirect model – illustrated in Figure 1 – in which WHE is believed to boost people's health by primarily intervening on two individuals' factors – i.e. persistence in goal striving and vulnerability to stress – which are believed to operate as mediators in the aforementioned relationship. Notably, I decided to focus on persistence in goal striving and vulnerability to stress because prior research has widely documented the crucial role that these individual factors assume in promoting well-being and a more effective stress management. These individual characteristics, in fact, can influence not only the way people react to stressful life circumstances but also the level of determination and engagement in goal-directed striving behaviors despite the presence of obstacles and barriers (Ingram & Luxton, 2005; Kopetz, Lejuez, Wiers, & Kruglanski, 2013).

This paper can extend existing literature in several ways. First, this paper contributes to expanding the set of outcomes associated with WHE as it considers two additional outcomes – i.e. persistence in goal striving and vulnerability to stress – which have been never associated with WHE in prior research. Second, it tests a more sophisticated model in which the effects of WHE on health are indirect and mediated by the two aforementioned intervening variables. Thus, this paper contributes to addressing the recent call for a more detailed examination of the mediating variables intervening in WHE–health relationships (Van Steenbergen & Ellemers, 2009). Third, this paper has important practical implications for HR managers as it documents the importance that a positive combination between work and home lives may have in counteracting the negative consequences of stress. This is important as it demonstrates that work experiences can influence people's vulnerability to stress not only in negative ways – i.e. work stressors (Zubin & Spring, 1977) – but also in a positive ways – i.e. work resources. Creating

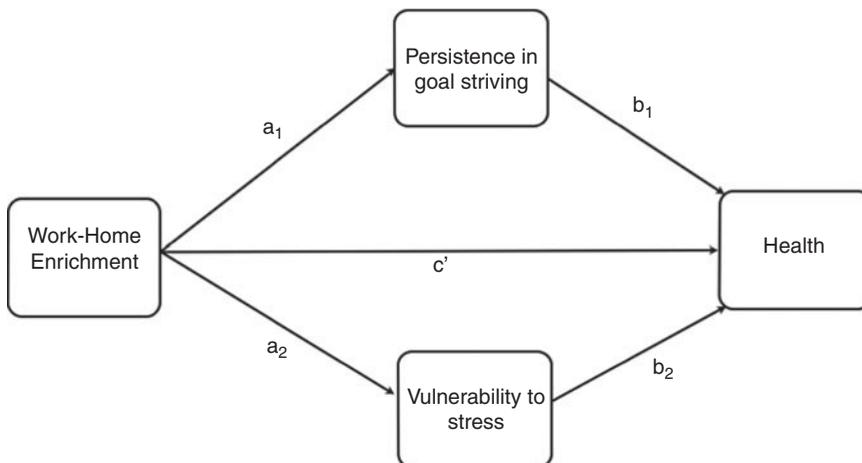


Figure 1. A multiple mediator model of WHE on self-reported health.

optimal conditions for WHE to be experienced can thus be an insightful strategy for employers to strengthen employees' psychological characteristics, such as persistence and resilience, which are essential to provide a more constructive response to life stressors. Finally, this paper documents the generalizability of the positive effects of WHE as it tests such effects across a large national sample of working adults who have participated in the second stage of the National Survey of Midlife Development in the United States (MIDUS II 2004–2006) and who are employed in several industries.

The paper is structured as follows. First, in the next section, I illustrate the basic tenets of the work–home resource model and the potential mechanisms conducive of the favorable outcomes of WHE on employees' health. Second, I delineate the processes through which WHE may benefit health through the mediating role of persistence in goal striving and vulnerability to stress. Third, I discuss the results of the mediating analysis and the implications for research and practice.

### Theoretical framework and hypothesized model

This paper is grounded on the *work–home resource model* (ten Brummelhuis & Bakker, 2012). The work–home resource model suggests that the contextual resources an individual may gain in the workplace are instrumental to the development and accumulation of further key personal resources, which have the potential to be conducive of positive outcomes for the individual in every domain of his or her life (ten Brummelhuis & Bakker, 2012). The central component of the work–home resource model is the concept of *resources*. Resources are 'an asset that may be drawn on when needed to solve a problem or cope with a challenging situation' (Greenhaus & Powell, 2006, p. 80). Sample resources include material assets (income, house), personal characteristics (self-esteem, personality traits), skills (task and relational skills), conditions (work status, marital status), energies (mood, physical energy) and psychological assets (resilience, persistence, optimism) (Bakker & Demerouti, 2007; Barnett & Hyde, 2001; Carlson, Kacmar, Wayne, & Grzywacz, 2006; Schaufeli & Bakker, 2004; Wayne, Grzywacz, Carlson, & Kacmar, 2007).

Resources can be classified in several ways. A first classification considers the source of resources and distinguishes them in contextual and personal resources (Hobfoll, 2002). Contextual resources – such as employment, network or social support – are originated in the social context where an individual is embedded and are gained through the daily exposure to work and personal life situations (ten Brummelhuis & Bakker, 2012). Personal resources – such as personality traits, skills or self-esteem – are located inside the individual and may be either dispositional traits and/or skills that are learnt through a myriads of life experiences (Hobfoll, Johnson, Ennis, & Jackson, 2003). A second classification considers the transience of resources and distinguishes them in volatile and structural resources. Volatile resources – such as energy or mood – are transitory resources that can be applied for a restricted number of scopes. Structural resources – such as personality traits or social bonds – are durable assets that can be used for multiple scopes (ten Brummelhuis & Bakker, 2012). Finally, another type of resources that assumes a central role in the work–home resource model is *key resources*. Key resources are important personal characteristics that are generated and replenished by the presence of favorable contextual conditions and that are defined as *key* since they are crucial in ensuring an effective management of the work–home interface and a constructive response to stress (Hobfoll, 2002). For example, optimism and self-esteem are key personal resources because they are individual factors that can facilitate the deployment of additional resources, such as coping strategies or social bonds with influential

stakeholders, which might help individuals to handle with stressful life situations more effectively (Hardré, 2003).

The concept of resources is central in both the WHE and Conservation of Resources (COR) theories that constitute the theoretical pillars of the work–home resource model (ten Brummelhuis & Bakker, 2012). WHE theory is grounded on the role expansion theory (Barnett & Hyde, 2001; Marks, 1977; Sieber, 1974), which conceives personal resources – such as energy and attention – not finite but expandable through a continuous involvement in multiple activities. Drawing on this view, WHE theorists assume that people can gain important resources when nurturing positive synergies between their work and home domains. Such resources might be transferred back and forth across domains leading to performance improvements and better individual functioning in both the work and home systems (Greenhaus & Allen, 2011; Greenhaus & Powell, 2006). WHE is bidirectional as it is possible that people experience positive synergies that originate at work and that generate favorable effects in the home domain and vice versa. In this paper, I focus only on work-to-home enrichment as the main purpose of this paper is to illustrate the importance of work experiences as a vehicle for strengthening individuals psychological resources and for improving their health status.

COR theory posits that individuals struggle to acquire, maintain and protect key personal and contextual resources that can favor the attainment of the things they value (Hobfoll, 1989, 2002). A crucial mechanism in the COR theory is the *resource gain spiral* that consists of a process of resource generation and accumulation that contributes to expanding and replenishing the arsenal of resources at the individuals' disposal. In essence, a gain spiral occurs when prospective or actual gains of contextual and personal resources induce an upward spiral of positive emotions, which lead to the development of additional resources and positive mood that make an individual more capable to participate actively in every domain of his or her life (Hobfoll, 2002). For example, getting a promotion at work may activate a resource gain spiral as it may increase a person's level of income, the status, the skills and even the self-confidence, which can facilitate the development of further resources (e.g. more influential networks or more commodities) that make it easier the accomplishment of life goals.

By incorporating the WHE theory with the gain resource spiral, ten Brummelhuis and Bakker extended the understanding of how WHE functions. According to them, WHE is crucial in experiencing more positive outcomes in life as it generates a process of resource generation, expansion and replenishment that improves people's functioning and overall quality of life. This because people become resourceful and more available to cope with the myriads of life experiences constructively. Starting from this premise, in the next sections, I present a rationale linking WHE to self-reported health through a mediating effect on persistence in goal striving and vulnerability to stress.

### ***The relationship between work–home enrichment and persistence in goal striving***

Persistence in goal striving reflects the individual's willingness to change the external environment so that it may fit with personal needs and desires (Wrosch & Heckhausen, 1999; Wrosch, Heckhausen, & Lachman, 2000). It captures the individual's perseverance, effort and determination to manipulate the contextual conditions that impede the achievement of a desired goal in life. A typical example of persistence in goal striving consists of an individual putting more energy and tenacity in pursuing a desired goal when obstacles emerge. The effectiveness of persistence in goal striving in cope with life stressors and improving people's health has been widely documented in prior research

(e.g. Hall, Chipperfield, Heckhausen, & Perry, 2010; Koeske, Kirk, & Koeske, 1993; Locke & Latham, 1990; Schwarzer & Taubert, 2002). Persistence in goal striving has been shown to increase people's well-being, improve the effectiveness of stress management actions and also augment the individual's capability to adjust to age-related health problems (Wrosch et al., 2000). It is interesting to note that scholars believe persistence in goal striving to be like a muscle: it gets stronger the more an individual exercises it (Baumeister, Vohs, & Tice, 2007).

Drawing on this view, in this paper, I hypothesize, for two reasons, that WHE will contribute to boosting an individual's persistence in goal striving. First, in line with the work-home resource model I believe that WHE may activate a gain resource spiral that favors the generation, replenishment and accumulation of a greater bundle of contextual and personal resources, such as income, optimism, hardiness and so forth, which will make an individual more determined and tenacious to achieve a goal when difficulties emerge. For instance, WHE can manifest in greater social bonds at work with coworkers and/or supervisors that can give employees emotional and instrumental support to achieve personal goals. This is consistent with Greenhaus and Powell's (2006) seminal contribution on enrichment in which the authors noted that WHE is likely to generate favorable outcomes for people by primarily strengthening their psychological assets, such as persistence, hardiness and resilience.

Second, drawing on Fredrickson's (1998, 2001) broaden-and-build theory, I argue that experiencing WHE may nurture a positive emotional state (Greenhaus & Powell, 2006) that helps people to broaden their thoughts and actions, resulting in a greater effectiveness and decisiveness in what they are doing. Broaden-and-build theory posits that positive emotions have a generative effects on people, broadening their creativity and expanding the array of thoughts and actions that come to their mind when resolving problems (Fredrickson, 2001). Consistently, I believe that the positive emotions associated with the experience of WHE may increase people's persistence in goal striving as these positive emotions can make them more inclined and ready to develop effective thoughts, actions and strategies to attain life goals when obstacles emerge.

*Hypothesis 1:* Work-home enrichment will be positively associated with persistence in goal striving.

### ***The relationship between work-home enrichment and vulnerability to stress***

Vulnerability to stress refers to people's susceptibility to stress and mental disorders (Ingram & Luxton, 2005; Zubin & Spring, 1977). Vulnerable individuals are those who present a resource deficit that puts them in a state of mental health disorder (Ingram, Miranda, & Segal, 1998) and make them more sensitive to life demands (Choi, 2008). For example, vulnerable individuals are those who lack of hardiness, social support or who make substance abuse that hampers them to approach stressful life events in a constructive and positive way (Greene & Nowack, 1995; Whetten & Cameron, 2011). A compelling debate exists in the literature with regard to the dispositional versus situational nature of vulnerability to stress. Some scholars consider vulnerability to stress as a dispositional trait that is mainly influenced by a person's biological factors and early life experiences (Zubin & Spring, 1977). Others believe that vulnerability to stress is malleable and may also depend upon situational characteristics. This means that people can make something to reduce it (Ingram & Luxton, 2005). For example, those who believe that vulnerability to stress can be improved argue that with specific actions – such as building supportive

relationships with others, working on meaningful activities, exercising, cultivating spirituality and/or avoiding alcohol and drug abuse, just to name a few – people can reduce their vulnerability to stress and increase their mental and physical resilience (Ingram & Luxton, 2005).

Consistent with this latter conceptualization, in this paper, I hypothesize that WHE will contribute to reducing employees' vulnerability to stress. As aforementioned, people who experience high levels of WHE may be likely to develop and accumulate crucial psychological and physical resources that enable a more constructive response to life difficulties (Greenhaus & Powell, 2006). Indeed, prior research has demonstrated that WHE strengthens people's psychological resources and also positively influences their ability to adjust to demands of diverse role senders (Greenhaus & Powell, 2006; Hakanen, Peeters, & Perhoniemi, 2011; McNall, Nicklin, & Masuda, 2010; Rothbard, 2001; Wayne et al., 2007). Drawing on this evidence, it is plausible to assume that WHE can contribute to reducing individuals' vulnerability to stress since it is a crucial work experience that makes people more resourceful and less vulnerable to stress. Indeed, the resources gained through WHE can contribute to filling up the individuals' deficiencies in their arsenal of resources that has been demonstrated to increase vulnerability to stress.

*Hypothesis 2:* Work-home enrichment will be negatively associated with vulnerability to stress.

### ***The mediating role of persistence in goal striving and vulnerability to stress***

Lastly, I hypothesize that the relationship between WHE and health will be indirect and mediated by persistence in goal striving and vulnerability to stress. Greenhaus and Powell (2006) argued that WHE is likely to generate performance improvements in multiple regions of an individual's life, including health outcomes, through an initial effect on proximal individual outcomes – i.e. by operating on those resources that are more quickly available to a given individual, such as his or her mood, energy, optimism, hardiness and so forth. Similarly, the work-home resource model posits that WHE is conducive of favorable outcomes by generating an upward spiral of positive resources that contributes to develop, accumulate and mobilize psychical and psychological resource in a person's life system that can ensure an optimal life functioning. In line with these two arguments, I hypothesize that WHE will benefit people's health by primarily increasing their level of persistence in goal striving and reducing their vulnerability to stress. Notably, these two individual characteristics have been found to be two crucial, yet opposite, contributors of people's health (Parkes, 1994). On one hand, persistence in goal striving has been found to reduce health disorders, especially in adulthood, because it favors a more effective adjustment to age-related changes. Drawing on the Life-Span Theory of Control (Heckhausen & Schulz, 1995), which posits that people seek to adapt their behaviors to age-related changes to be in control of their situation, prior studies have demonstrated that persistence in goal striving is critical in promoting more positive health outcomes. This happens because persistence contributes to strengthening both people's perception to be in control of their life and also the level of engagement in what they are doing, which are both critical predictors of an adult's use of health prevention strategies (Hall et al., 2010; Heckhausen & Schulz, 1993; Schulz & Heckhausen, 1996). On the other hand, the stress-vulnerability model (Zubin & Spring, 1977) suggests that vulnerable individuals have a higher risk to incur in health disorders as they are more less effective in handling stressful events positively.

*Hypothesis 3:* The relationship between work–home enrichment and health will be mediated by (1) persistence in goal striving and (2) vulnerability to stress.

### Data and method

Data for the present study are from the second follow-up of the National Survey of Midlife Development in the United States (MIDUS II) collected by the John D. and Catherine T. MacArthur Foundation in collaboration with the National Institute of Health and the National Institute on Ageing (Ryff et al., 2004–2006). Respondents are English speakers selected with random digit dial procedures, who constitute a national representative population of noninstitutionalized adults aged 35–86. Of the 7108 participants in MIDUS I, 4963 accepted to participate in the second wave approximately nine years later. The response rate adjusted for mortality is 75%. The subsample used in this research ( $N = 2591$ ) is composed of all working participants at the moment of questionnaire administration and that present valid values for all study's variables. Of the 2591 participants, 50.6% were women; 71.4% were married at the moment of the data collection, whereas 15.8% were separated or divorced. A total of 84.9% of the sample had at least one child and 56.8% were engaged in a dual career family. The average age was 50.16 years ( $SD = 9.48$ ).

### Measures

*Work–home enrichment.* WHE was measured with four items developed by Grzywacz and Marks (2000) for the first wave of the MIDUS project. Although the scale was originally developed to measure of positive work–family spillovers, most researchers (e.g. Aryee, Srinivas, & Tan, 2005; Haar & Bardoel, 2008; Karatepe & Magaji, 2008) have adopted it to assess the presence of positive connections between the work and home domains. Sample items are ‘The things I do at work help me deal with personal and practical issues at home’; ‘Having a good day at work makes me a better companion when I get at home’. Internal reliability was adequate as demonstrated by the alpha coefficient that was equal to 0.72.

*Vulnerability to stress.* Vulnerability to stress was measured using the three items from the Multidimensional Personality Questionnaire (Patrick, Curtin, & Tellegen, 2002). These items were selected by the MIDUS' research team among the several others that compose the Multidimensional Personality Questionnaire as they capture the individual's reactivity to stress. A sample item is ‘Minor setbacks sometimes irritate me too much’. Vulnerability to stress was constructed by calculating the sum of the values of the items. The alpha coefficient was 0.74.

*Persistence in goal striving.* Persistence in goal striving was measured with a five-item scale developed by Wrosch et al. (2000). A sample item is ‘When I encounter problems, I don't give up until I solve them’. Persistence in goal striving was then constructed by calculating the mean across the set of items. The alpha coefficient was 0.78.

*Self-reported health.* Self-reported health was measured with a diagnostic-specific scale aimed at measuring symptoms of chronic pain and adapted from the Larsen and Kasimatis' (1991) physical symptom checklist. Respondents were asked to indicate how often they had experienced a list of 10 health problems – like headaches, backaches, irritability, trouble getting to sleep, pain or discomfort during intercourse – over the preceding 30 days. The overall self-reported health index was constructed by calculating the sum of the values of the items. Higher scores reflect a better health condition. In order to check for the unidimensionality of the scale, and because this scale has been not extensively used in prior research as the other ones aforementioned, a factor analysis with

varimax rotation was conducted. The findings confirmed the 10 items loaded onto a single factor with an eigenvalue greater than 1 (3013) and accounting for sizeable amounts of the variance (30.13%). The alpha coefficient was 0.73.

*Control variables.* Consistent with much research exploring work–home and health dynamics, we included respondents' gender, age and health locus of control as control variables in our model. Gender was coded as 1 = male and 2 = female. Age was self-reported by participants indicating their year of birth. Health locus of control was measured with four items developed by the MIDUS's research team for the scope of the project. A sample item is 'Keeping healthy depends on the things I can do'. The alpha coefficient was 0.75. It is important to note that the variable indicating the respondents' 'number of children' was not included as covariate in the analysis both because the sample was composed of working adults, who presumably have no more staying-at-home children, and because I had no information whether the children still lived or not at the respondents' home.

### *Measurement model*

A confirmatory factor analysis (CFA) using the *lavaan* package developed for the statistical software R (Rosseel, 2012) was run the fit of the hypothesized model. I followed Williams, Vandenberg, and Edwards (2009) recommendations regarding goodness-of-fit cutoffs: (1) the comparative fit index ( $CFI > 0.95$ ), (2) the root mean square error of approximation ( $RMSEA < 0.08$ ) and (3) the standardized root mean residual ( $SRMR < 0.10$ ). Table 1 presents the results for the hypothetical measurement model and two alternative models in which I combined together vulnerability to stress and health and WHE and persistence in goal striving, respectively. The results indicate that the hypothesized model did fit the data better than the two alternative models, which resulted in all models being in a significantly poorer fit (both  $p < 0.001$ ).

### *Analysis*

Bootstrap procedure for multiple mediation models was used to test the indirect effect of WHE on individual health. This procedure, illustrated by Preacher and Hayes (2008), uses ordinary least square regression to estimate coefficients, and 1000 bootstrap samples to construct confidence intervals for the indirect relationships. A macro developed by the authors for SPSS was used to run the analyses. Self-reported health was entered as dependent variable, WHE as predictor and persistence in goal striving and vulnerability to stress as mediators. Bootstrap procedure is recommended in the estimation of indirect effects (Preacher & Hayes, 2008) because it makes less unrealistic assumptions in comparison with the traditional mediation approaches, such as the causal step approach (Baron & Kenny, 1986) or the product-of-coefficients approach (Sobel, 1982). For instance, bootstrapping does not make any assumption of normality of the sampling distribution, and it allows to increasing the power of analyses by maintaining reasonable control over the Type I error (Hayes, 2009; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Finally, this procedure allows to take into account multiple mediators simultaneously. This is desirable over specifying and testing separate simple mediation models because it reduces the parameter bias resulting from the omission of important variables in the hypothesized model (Preacher & Hayes, 2008).

Table 1. Results of confirmatory factor analysis for study variables.

Model	Model fit indices				Model differences				
	$\chi^2$	df	CFI	RMSEA	SRMR	$\Delta\chi^2$	$\Delta df$	p	Details
1. Hypothesized four-factor model: work-home enrichment, persistence in goal striving, vulnerability to stress, health	3572.7	203	0.96	0.06	0.05				
2. Alternative three-factor model: work-home enrichment, persistence in goal striving, vulnerability to stress and health combined	5455.1	206	0.88	0.07	0.06	1882.5	3	0.001	Model 2 to 1
3. Common method variance model: work-home enrichment and persistence in goal striving combined, vulnerability to stress, health	11515.7	206	0.75	0.11	0.12	7943	3	0.001	Model 3 to 1

Note: CFI, comparative fit index; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual.

## Results

Table 2 reports means, standard deviations and correlations. WHE was significantly correlated to all outcomes in the expected directions (all  $p < 0.001$ ). Besides, all mediators were correlated to self-reported health in the expected direction. Persistence in

Table 2. Correlation, means and standard deviation.

	Mean	SD	1	2	3	4	5	6	7
1. Work-home enrichment	2.91	0.73	1						
2. Persistence in goal striving	3.19	0.55	0.19**	1					
3. Vulnerability to stress	6.20	2.24	-0.073*	-0.23**	1				
4. Self-reported health	44.33	9.16	0.06**	0.12**	-0.32**	1			
5. Gender	NA	NA	0.02	0.02	-0.01	-0.21**	1		
6. Age	55.43	12.44	0.03	0.04*	-0.13**	-0.10**	0.01	1	
7. Health locus of control	6.06	0.87	0.12**	0.22**	-0.14**	0.15**	0.08**	0.02	1

Notes:  $N = 2591$ .

\*\* $p < 0.001$ ; \* $p < 0.05$ .

goal striving and vulnerability to stress were positively and negatively correlated to health as expected.

**The indirect effects of persistence in goal striving and vulnerability to stress**

Table 3 presents point estimates and bootstrap confidence intervals for the indirect effects. The results indicate that the total effect of WHE on health (c) is statistically different from zero ( $\beta = 0.57, p < 0.001$ ). The direct effect ( $c_1$ ), which indicates the effect of WHE on health after controlling for the proposed mediators – persistence in goal striving and vulnerability to stress – becomes not statistically significant ( $\beta = 0.30, p > 0.10$ ), indicating full mediation. The total indirect effect of WHE through the two proposed mediators is significant, with a point of estimate of 0.27 and a 95% confidence interval of 0.11 to 0.46. The first indirect effect ( $a_1b_1$ ) carries the effect of WHE on health through persistence in goal striving only. The coefficient  $a_1$ , which illustrates the effect of WHE on persistence in goal striving, is statistically significant ( $\beta = 0.12$ ,

Table 3. Direct, total and indirect correlations of work–home enrichment on self-reported health through persistence in goal striving and vulnerability to stress (path ab).

Outcome	$\beta$	S.E.	t	p	
Persistence in goal striving ( $a_1$ paths)					
Gender	0.004	0.020	0.24	0.807	
Age	0.003	0.001	3.40	0.000	
Health locus of control	0.117	0.011	9.86	0.000	
Work–home enrichment	0.121	0.13	8.78	0.000	
Vulnerability to stress ( $a_2$ paths)					
Gender	0.008	0.084	0.09	0.923	
Age	-0.035	0.004	-8.84	0.000	
Health locus of control	-0.311	0.049	-6.31	0.000	
Work–home enrichment	-0.149	0.057	-2.61	0.009	
Self-reported Health ( $b_1$ and $b_2$ paths)					
Gender	-3.93	0.301	-13.04	0.000	
Age	-0.124	0.014	-8.48	0.000	
Health locus of control	1.15	0.180	6.42	0.000	
Work–home enrichment	0.306	0.208	1.47	0.141	
Persistence in goal striving	0.702	0.293	2.38	0.016	
Vulnerability to stress	-1.25	0.70	-17.66	0.000	
Direct effect of work–home enrichment on self-reported health (c paths)					
Work–home enrichment	0.306	0.208	1.47	0.141	
<i>Bootstrap BC 95% CI</i>					
	<i>Point estimate</i>	<i>S.E.</i>	<i>Lower</i>	<i>Upper</i>	<i>p</i>
Indirect effect of work–home enrichment via mediators					
Total indirect	0.27	0.08	0.10	0.43	0.001
Persistence in goal striving	0.08	0.03	0.01	0.16	0.001
Vulnerability to stress	0.18	0.07	0.04	0.34	0.001
Persistence in goal striving vs vulnerability to stress	-0.10	0.08	-0.27	0.05	n.s.

Note: BC, bias-corrected bootstrapping confidence intervals. Estimate based on 1000 bootstrap samples. Model summary:  $R^2 = 0.18; F = 103.91 (p < 0.001)$ .

$p < 0.001$ ). The indirect effect is also significant with a point estimate of 0.08 and a 95% confidence interval of 0.01 to 0.17. The second indirect effect ( $a_2b_2$ ) carries WHE on health through vulnerability to stress. The coefficient  $a_2$ , which illustrates the total effect of WHE on vulnerability to stress, is statistically significant ( $\beta = -0.14$ ,  $p < 0.001$ ). Similarly, the indirect effect of WHE on health through vulnerability to stress is also significant with a point estimate of 0.18 and a 95% confidence interval of 0.05 to 0.35. Furthermore, a pairwise contrast of indirect effects was conducted to compare the strength of two mediators considered in the model and to verify whether their magnitude was equal in size (Preacher & Hayes, 2008). Although vulnerability to stress presented a stronger statistical power than persistence in goal striving, since the magnitude effect was stronger, the analysis of pairwise contrast shows that the two indirect effects cannot be distinguished in terms of magnitude since the zero is contained in the confidence interval (LLCI  $-0.27$  to ULCI  $0.05$ ). Hence, both mediators had equal importance to elucidate the indirect effect of WHE on self-reported health. A graphic visualization of the results is illustrated in Figure 2.

From visual output in Figure 2, the directions of the  $a$  and  $b$  paths are consistent with the interpretation that high levels of WHE lead to greater persistence in goal striving and lower vulnerability to stress, which in turn lead to better health. Hence, all the hypotheses considered in the model were supported by data.

## Discussion

The goal of this research was to extend our current understanding of the process underlying the positive effects of WHE on people's health. The results confirmed the presence of a full mediation model since WHE contributed to improving individual health by increasing persistence in goal striving and reducing vulnerability to stress. This paper contributes to the WHE and stress literatures in several ways. First, it expands the array of outcomes associated with WHE that is still limited (Greenhaus & Allen, 2011). It also empirically validates a more sophisticated process through which WHE is conducive of significant health improvements. This responds to recent calls for exploring more deeply the intervening factors in the relationship between WHE and health outcomes

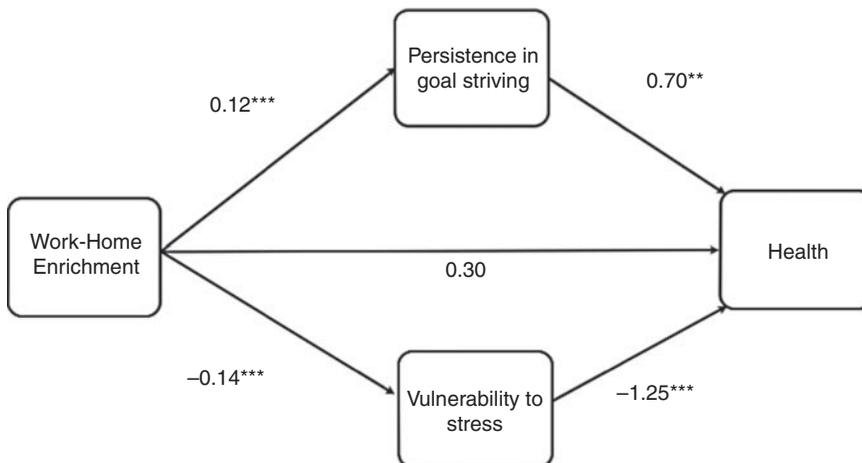


Figure 2. Results of the multiple mediated model linking WHE to self-reported health.

(Van Steenbergen & Ellemers, 2009). Furthermore, by demonstrating the significant influence of WHE on persistence in goal striving and vulnerability to stress, this study also provides empirical support to one of the most influential tenets of the WHE theory, which postulates that resources gained in one role are likely to benefit people's performance in another role 'by increasing persistence and resilience in the face of failure and challenges' (Greenhaus & Powell, 2006, p. 81).

The second contribution of this paper is to rely on the work-home resource model (ten Brummelhuis & Bakker, 2012) to advance our understanding of how WHE operates on health. We have demonstrated that WHE can serve as a crucial generative process of key psychological resources – such as persistence in goal striving and resilience to stress – which can be strengthened as result of enriching work-home positive combinations. This because WHE is likely to generate an upward resource spiral leading to a positive variation in the individuals' arsenal of resources, resulting in an enhanced capacity to persist when striving for a goal and a reduced susceptibility to life stressors. The results of this research can also help to explain 'why some people are better than others in coping with stressful life circumstances' (ten Brummelhuis & Bakker, 2012, p. 550). When individuals experience high levels of WHE it signifies that they have been able to effectively use in one domain resources gained in another. This manifests in concrete psychological gains for individuals as they felt more confident to cope with life stressors effectively by virtue of their acknowledgement to have at their disposal a broader set of resources, thoughts, actions and social bonds to rely on in case of need. This paper also contributes to the stress literature by empirically documenting the importance that positive combinations between work and other life roles can have in neutralizing the negative consequences of role stressors through an upward spiral of continued psychological growth (ten Brummelhuis & Bakker, 2012). This indicates WHE as an important contributor to filling the deficiencies in an individual's arsenal of resources that make him or her less susceptible and more resistant to the detrimental consequences of stress (Ingram & Luxton, 2005).

### ***Managerial implications***

The results of this study have interesting managerial implications. The foremost message deriving from this paper is that the experience of positive combinations between work and home domains can be an important contextual factor improving people's health and strengthening their psychological resources. Therefore, employers have the crucial task to create optimal conditions at work for WHE to occur. A first way to do it may consist of developing a supportive family culture at work as this can contribute to resolving work-home tensions and make people healthier and less stressed at work. The positive state deriving from such experience can make them more resourceful, tenacious and capable to accommodate work and home stressors constructively. In presence of a supportive culture, employees can be encouraged to discuss personal issues at work and this can make them more inclined and ready to experiment positive synergies between work and home lives. In the long term, a supportive work-family culture can also favor the presence of more skilled, balanced, resourceful and healthy people, who are ready to engage successfully in all the regions of their life. This can also have a positive impact on the local communities where organizations operate. Employees working in such supportive organizations can be more able to thrive both at work and in their personal life and therefore more psychologically available to invest resources in every domain of their lives.

I also believe that it is also crucial for employers to find ways to help their collaborators to recognize and accomplish hypothetical WHE opportunities and boost their resilience. This can be done both through the organization of practical workshops that help employees manage harmoniously work and personal lives and resolve role tensions and also by encouraging employees to engage in stress relief activities, such as exercising, cultivating spirituality or spending time in personal hobbies, family life and social community, which are all fundamental activities for strengthening employees' mental and physical resilience (Hammer, Kossek, Yragui, Bodner, & Hanson, 2009). It is also important to remind employees about the resources that can be gained in the workplace and that can be used to improve the quality of their lives also in other domains. A possible way to do it might consist of creating and diffusing in the workplace specific guides and other informative material on the principles and benefits of WHE. For example, through a monthly newsletter or other internal communication channels, managers could diffuse among their collaborators meaningful stories and positive anecdotes on how resources gained in the workplace can make personal life easier and more satisfying.

Finally, to make employees more resourceful and available to engage in multiple roles, managers could also design for their collaborators more challenging, meaningful and enriching tasks as these tasks may generate favorable psychological and physical gains for employees. For instance, increasing skill variety and challenging employees with difficult and meaningful tasks represents an effective way to make people more resilient and tenacious as these tasks require employees to go beyond their limit and try hard to succeed. Notably, Kanter (2013) advocates that mastery challenging and meaningful tasks can increase people's well-being and raise their productivity as this helps cultivating their resources, thoughts, positive emotions and engagement.

### *Limitations and future research*

This paper has several limitations. Despite the results of this paper have a high generalizability since they are based on a large national sample of working adults, they rely on self-reported information which can raise doubts on the causal relationship between the investigated relations. The use of longitudinal research design will thus represent an insightful extension of the current work. Another limitation of the current research is the lack of consideration of the other direction of WHE, namely home-to-work enrichment. Although this choice was driven by the main scope of this paper, which was to underscore the importance of work resources to strengthen individual psychological resources, it will be important in future research to consider also the other direction of enrichment in order to provide a complete understanding of WHE can influence people's health. For instance, a recent study by Lee, Chang, and Kim (2011) has shown that family-to-work enrichment could not be as beneficial as expected since the family situation was become an additional source of stress for people, depleting their resources rather than multiplying them. Future research is thus needed to explore if similar unforeseen results can stand also for Western employees or national culture represents a determinant factor influencing the relationship between WHE and health.

### **Conclusions**

This research suggests that WHE is an important contributor of positive health for people by virtue of the improvements generated on their psychological resources, namely persistence in goal striving and resilience to stress. This paper provides a remarkable contribution to existing research as it is one of the first attempts to explore the relationship

between WHE and health through a more sophisticated research model that points out two mediating variables on which WHE operates more incisively. It is also remarkable as it empirically demonstrates the positive impact of WHE on strengthening those individual psychological factors that make people more resilient and tenacious in life.

### Disclosure statement

No potential conflict of interest was reported by the author.

### Note

1. Following recent theoretical developments in work–family enrichment research (Kreiner, 2006; Kreiner, Hollensbe, & Sheep, 2009; ten Brummelhuis & Bakker, 2012), in this paper, I adopt the term WHE instead of work–family enrichment to mark the inclusiveness of a wider array of individual circumstances (e.g. single partners, etc.) and to capture the forms of enrichment that derive from the combination of work and other personal commitments not exclusively related to the family, such as hobbies, sports and/or investment in the social community.

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