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Management from the Nova School of Business and Economics

**Work Innovation Begins at Home: The Impact of Family-Work Conflict on Innovative
Work Behaviors**

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Abstract

Despite the recognition of the cross-domain consequences of family-work conflict (FWC), prior research lacks to explain how this conflict affects work-related behaviors. The present study examines the mediation role of work engagement and rumination on the relationship between FWC and innovative work behaviors (IWB). Based on the Work-Home Resources Model (WH-R), we argue that FWC impairs employees' IWB due to the consumption of valuable personal resources, thus leaving individuals with insufficient resources to invest in their work roles. Using a time-lagged panel design with a sample of 306 employees, our results demonstrate that work engagement mediates the negative effect of FWC on IWB. Limitations, implications for practice and future research are discussed.

Keywords: family-work conflict, innovative work behaviors; work-home resources model; work engagement; rumination

Introduction

Employees are challenged with balancing their family and work roles (Nohe, Meier, Sonntag, & Michel, 2015) and the participation in both the work and family domains may create a conflict as family duties are confronted with work responsibilities (Greenhaus & Beutell, 1985). Past research shows that the consequences of FWC go further than psychological and physical health, to include individuals' attitudes and behaviors towards their jobs and organizations (Ho, Chen, Cheung, Liu, & Worthington Jr, 2013).

Family-work conflict (FWC) is a form of interrole conflict (Kahn, Wolfe, Quinn, Snoek and Rosenthal, 1964) that emerges when the family role disturbs the work role (Frone, Yardley, & Markel, 1997). According to Greenhaus and Beutell (1985), the family and the work domains have distinct norms and responsibilities, making them opposite in some respect, which can cause a negative spillover from one domain to the other.

Prior research points out several consequences of FWC such as lower life satisfaction and increased depression (Li, Shaffer, & Bagger, 2015), increased strain (Nohe et al., 2015), and lower well-being (Cabrera, Casademunt, Molina, & Angulo, 2018). However, the outcomes of FWC are not strict to one specific domain (Amstad, Meier, Fasel, Elfering, & Semmer, 2011). In fact, the consequences of FWC are recognized to affect one's work-domain as well, leading to burnout (Amstad et al., 2011; Peeters, Montgomery, Bakker, & Schaufeli, 2005), lower job satisfaction (Grandey, Cordeiro, & Crouter, 2005) and exhaustion and cynicism at work (ten Brumemlhuis, Haar, & Roche, 2014).

The main argument of this prior research follows the tenets of the scarcity of resources hypothesis (Selvarajan, Cloninger, & Singh, 2013). According to this theory, FWC may consume individuals'

limited resources (such as energy and time), leaving employees with fewer resources to be applied in the work domain (ten Brummelhuis & Bakker, 2012).

In this paper, we focus on the relationship between FWC and innovative work behaviors (IWB). Past research showed that FWC may have a potential harmful effect on innovation (Choi, Cundiff, Kim, & Akhatib, 2018). However, only a few studies have considered the conflict between family and work roles as a factor obstructing IWB (Choi et al., 2018). Innovation requires that employees are both willing and able to be innovative (Anderson, Dreu, & Nijstad, 2004), so it is crucial to study what drives individuals' innovative behavior (Scott & Bruce, 1994). Additionally, since innovation is necessary for the success, survival and competitiveness of organizations (Janssen, Van de Vliert, & West, 2004), it is important to understand the mechanisms through which FWC undermines IWB.

We propose that FWC affects IWB through two mechanisms. On one hand, FWC may impact IWB through a reduction of employees' work engagement. Research on innovation shows that work engagement is linked to higher innovative performance (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008) and better ability to cope with challenges (Kwon & Kim, 2019). However, FWC may compete for one's limited resources necessary to be engaged at work (Johnson, Eatough, Hammer, & Truxillo, 2018).

On the other hand, FWC may affect IWB due to increased rumination about family demands while at work. Thinking about family conflicts in the workplace may deplete cognitive resources, impairing one's ability to deal with several aspects of work (Du, Derks, Bakker, & Lu, 2017). Since innovation is linked to a higher thinking process that requires focused cognitive abilities (Hogarth,

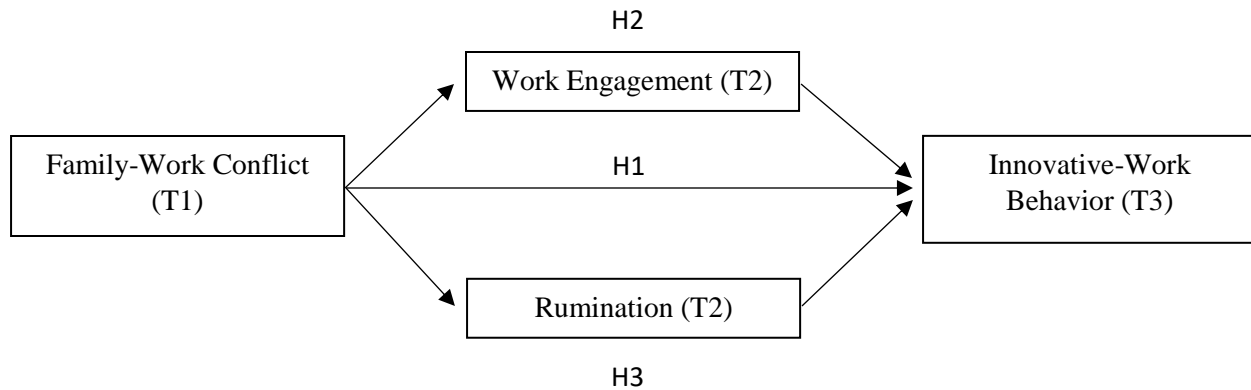
1987), rumination about family problems during work is expected to reduce employee's innovative work behaviors.

The present study focusses on the potential negative effect that FWC may have on IWB. Considering that spillover mechanisms include affect and cognition (Repetti, Wang, & Saxbe, 2009), we examine how the relationship between FWC and IWB is mediated by a motivational-affective mechanism (work engagement) (Schaufeli & Bakker, 2004), and a cognitive mechanism (rumination) (Cropley & Purvis, 2003). Figure 1 (in Appendix) shows our proposed model.

Our study makes several important contributions to the literature. First, work-family conflict is considered to be more prevalent than FWC, which is reflected in FWC being the less studied of both dimensions (Bagger, Li, & Gutek, 2008; Amstad et al., 2011). This way, by addressing FWC, we advance theoretical understanding of this conflict and how it relates to work-related outcomes. Second, only a few studies have examined factors such as work-family conflict in its potential negative relationship with IWB (Choi et al., 2018). Our research addresses two potential paths that promote our knowledge of the processes by which FWC impacts individuals' IWB.

Third, drawing on past research pointing cross-sectional studies to be more prevalent in innovation and work-family conflict literature (Anderson et al., 2004; Amstad et al., 2011), our use of a time-lagged panel design provides a better understanding of the causality effects by involving a temporal separation between between the effects and the causes (Lian, Ferris, Morrison, & Brown, 2014)

Figure 1: Proposed Model and Hypotheses



Theoretical Background

Family- Work Conflict and Innovative Work Behaviors

Family-work conflict is a type of interrole conflict that occurs when forces and characteristics of the family and work domains are conflicting in some respect (Greenhaus & Beutell, 1985). This means that compliance with pressures from the family domain makes it more difficult for individuals to cope with pressures in the work domain. (Lapierre, Hammer, Truxillo, & Murphy, 2012). FWC is associated with three distinct categories of outcomes: domain-unspecific outcomes (such as life satisfaction); family-related outcomes (such as marital satisfaction); and work-related outcomes (such as organizational commitment) - Bellavia & Frone (2005).

Past research shows that FWC is linked to several work-related outcomes, such as turnover intentions (Boyar, Maertz Jr, Pearson, & Keough, 2003); workplace cognitive failure (Lapierre et al., 2012); and project commitment (Xia, Zhong, Wang, & Tiong, 2017). However, scholars have

not reached an agreement on whether FWC mainly affects the domain of origin (family) or the work domain (Shockley & Singla, 2011; Nohe et al., 2015).

In this context, two distinct hypotheses appear regarding the domain of the origin of the conflict and the outcome domain. The cross-domain hypothesis suggests that family-work conflict mainly affects the work domain (Frone, Russell, & Cooper, 1992). This hypothesis states that although originated in one domain (family), the conflict mainly impacts the other domain (work). On the other hand, the matching-hypothesis claims that the main effect of FWC is felt in the domain where the conflict is originated (family domain) (Amstad et al., 2011).

In this paper, we focus on the cross-domain hypothesis. As recent research appears to contrast with the previously dominant cross-domain theory (Shockley & Singla, 2011; Amstad et al., 2011), some authors argue that the cross-domain hypothesis may be more adequate than the matching hypothesis for certain outcomes, such as performance outcomes (Liu, Lu, & Zhang, 2013). These authors further argue that FWC impedes employees to exert further personal resources to perform their work tasks.

Despite the recognition that FWC has an impact on several work-related outcomes connected to organizations' performance (Bagger & Li, 2012), past research has mainly focused on well-being indicators and on family, work and life satisfaction (Amstad et al., 2011). Few studies have examined IWB as an outcome of FWC (Choi et al, 2018). IWB have become a major component of employees' performance evaluations (Ng & Lucianetti, 2016) and innovation is recognized as the channel through which the firms' resources are transformed in superior performance (Lawson & Samson, 2001). IWB refer to the employees' intentional behavior towards the generation,

introduction and/or implementation of new products, ideas, procedures or processes, within his or her organization, work group or work role (West and Farr, 1990).

The Conservation of Resources Theory (COR) is one of the most dominant models linking individuals' well-being and stress (ten Brummelhuis & Bakker, 2012) and has previously been applied to the interaction between the work and family roles (Grandey & Cropanzano, 1999; Wayne, Lemmon, Hoobler, Cheung, & Wilson, 2017). The COR model states that people strive to obtain, protect and retain resources and that stress arises as a response to the potential or actual loss of these resources (Hobfoll, 1989). The Work-Home Resources Model (WH-R) has its basis grounded on the COR Theory (ten Brummelhuis & Bakker, 2012). The WH-R model reflects how personal resources (such as energy and mood) link the demands in the family domain with the outcomes in the work domain (ten Brummelhuis & Bakker, 2012). This model further describes how family demands may deplete individuals' personal resources necessary to perform successfully in the work domain (ten Brummelhuis & Bakker, 2012).

Innovation requires a large investment of resources, such as energy and time, in the generation and implementation of new and useful solutions (Montani, Odoardi, & Battistelli, 2014). As family and work compete for the individuals' limited physical, temporal, and psychological resources (Edwards & Rothbard, 2000), FWC may deplete the personal resources that are required for the success in the work-role. According to the WH-R model, FWC may induce a depletion of resources as individuals try to cope with the conflict, leaving insufficient resources available for employees to perform innovatively at work (ten Brummelhuis & Bakker, 2012).

Past research shows that FWC has a negative direct effect on job performance (Netemeyer, Alejandro, & Boles, 2004). Similar findings were reported between FWC and self-reported and

supervisor assessed job performance (Hoobler, Wayne, & Lemmon, 2009). Since IWB are described as an important component of employees' performance (Yuan & Woodman, 2010), similar results between FWC and IWB are expected to be found. To the knowledge of the authors, the few studies that examined the relationship between FWC and IWB reported a negative harmful effect (Choi et al., 2018). For example, Ng and Feldman (2013) found that as employees prefer to spend more time with their families, they will be less willing to engage in IWB because it harms their personal time.

Drawing on the WH-R, we hypothesize that the personal resources necessary for IWB are lost or reduced due to FWC and one's effort to manage both the family and the work roles. This loss of resources will limit one's ability to devote the necessary resources for innovation, ultimately decreasing employees' IWB.

Accordingly, the first prediction of our work is as follows:

Hypothesis 1: Family-work conflict is negatively associated with innovative work behaviors.

The mediating role of Work Engagement

Work engagement is defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication and absorption" (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p.74). Thus, work engagement is characterized by high levels of energy and mental adaptability in the workplace and reflects one's intense involvement in work tasks and full concentration at work (Bakker & Demerouti, 2008). Engaged employees are energetic, are

passionate about their work and are absorbed in their jobs (Bakker, Schaufeli, Leiter, & Taris, 2008)

Employees have a limited amount of energy and resources, which may impose difficulties to achieve sustained levels of work engagement (Halbesleben, Harvey, & Bolino, 2009). This is consistent with Rothbard's (2001) perspective that individuals' limited resources are invested in one role (family) at the expenses of the other role (work). Since work engagement reflects the voluntary effort devoted by employees in their jobs (Frank, Finnegan, & Taylor, 2004), it is expected that the depletion of personal resources (such as energy) induced by FWC decreases employees' work engagement (Breevaart & Bakker, 2011)

Work-family literature supports the idea that personal demands such as obligations and problems related to the family domain, can consume resources that people require to effectively manage the demands of the work domain (Lapierre et al., 2012). For example, Witt and Carlson (2006) found that strain-based FWC depletes employee's energy resources, which causes them to reduce their effort towards work-related duties. This view is aligned with the WH-R model, where employees withdraw their effort from the work domain in order to preserve resources to successfully deal with the demands from the family domain (ten Brummelhuis & Bakker, 2012).

Engaged employees are expected to perform innovatively by developing a proactive approach to deal with problems and challenges (Kwong & Kim, 2019). Additionally, work engagement is associated with high performance (Harter, Schmidt, & Hayes, 2002) and creativity (Bakker, Gierveld, & Van Rijswijk, 2006), being both constructs related with IWB (Halbesleben et al., 2009; Yuan & Woodman, 2010). Employees' engagement is expected to increase their IWB (Kwon & Kim, 2019) as it allows individuals to go further than the limits of their formally defined jobs (Rich,

Lepine, & Crawford, 2010). However, IWB require the investment of a substantial amount of time and effort and individuals may be prevented from applying their energy to innovation-related activities (Montani, Odoardi, & Battistelli, 2014). If resources are depleted in the process of combining the family and the work roles, employees may have more difficulty to stay engaged and to devote a persistent effort to comply with the demands of the work environment or may even disengage from IWB in order to preserve resources (ten Brummelhuis & Bakker, 2012).

The link between work engagement and IWB has already been addressed in past research. Bailey, Madden, Alfes, and Fletcher (2017), in their synthesis of narrative evidence including 214 studies focusing on the antecedents and outcomes of work engagement, reported that the link between work engagement and IWB was found in seven studies. Since IWB may involve trial and error and very often include fail, engagement is viewed as an important factor for innovation (Orth & Volmer, 2017).

We argue that FWC is associated with reduced IWB because the conflict's demands consume individuals' mental and physical energy, leaving scarce personal resources for employees to effectively perform their tasks in the work domain (Du et al., 2016). Since work engagement is characterized by the investment of personal emotional, physical and cognitive energy at work (Kahn, 1990), it is expected that this loss of resources will not allow employees to be completely engaged in their work roles. Consequently, individuals may not have the capacity to devote the necessary intense cognitive, physical, and psychological effort to perform innovatively (Yuan & Woodman, 2010).

Accordingly, the second prediction of our work is as follows:

Hypothesis 2: Work engagement mediates the negative relationship between family-work conflict and innovative work behaviors.

The mediating role of Rumination

Family-work conflict suggests that individuals are confronted with family demands that occupy their minds when they are at work (Tetrick, Miles, Marcil, & Van Dosen, 1994). In fact, individuals may be physically present in their work roles, while at the same time feeling distracted by emotions or thoughts connected to the family domain (Ashford, Kreiner, & Fugate, 2000).

Rumination is defined as a group of continuous and deliberate thoughts that are stuck around a common subject or topic and that reappear without an immediate call requiring these thoughts (Martin & Tesser, 1996). Rumination is a cognitive mechanism of spillover that prolongs the negative effects of stressors (Du et al., 2018), characterized by the compulsive focus of one's attention on his or her symptoms of distress (Nolen-Hoeksema, 1991).

FWC imposes additional demands on the individuals' finite cognitive resources (Johnson et al., 2018). Ruminating about family issues during work may consume energetic, attentional and emotional resources, preventing these resources from being devoted to the work role (Beal, Weiss, Barros, & MacDermid, 2005). Drawing on the WH-R model, ruminative thoughts about FWC may consume attention, cognitive resources and physical energy, leaving individuals with fewer of these resources to entirely participate in their work roles (Poppleton, Briner, & Kiefer, 2008). Rumination is associated with reduced problem-solving capabilities and lower concentration and

attention (Ward, Lyubomirsky, & Nolen-Hoeksema, 2003) as individuals are focused on their negative thoughts rather than concentrated on active behaviors (Madrid, Patterson, & Leiva, 2015).

Given the uncertainty and risk involved in the innovation process, IWB constitute a cognitive demanding activity that require the investment of the employees' energetic resources (Montani, Dagenais-Desmarais, Giorgi, & Grégoire, 2016). Additionally, innovation is considered a higher thinking process that requires focused cognitive capabilities (Hogarth, 1987) and the management of individuals' attention (Van de Ven, 1986). Considering the WH-R model, rumination will deplete attentive and energetic resources, threatening the productive use of these resources in work-related activities, such as IWB (Du et al., 2018).

Although the relationship between work-related rumination and work-related outcomes such as innovation has been previously addressed (Kump & Knipfer, 2016; Vahle-Hinz, Mauno, Bloom, & Kinnunen, 2017), to the authors' knowledge, the availability of past research considering family-related rumination and IWB is much narrower. However, Montani, Dagenais-Desmarais, Giorgi and Grégoire's (2016) study on the impact of negative affect on IWB provides good insights of the potential negative relationship between rumination and IWB.

Individuals are expected to ruminate on the causes, characteristics and consequences of FWC (Amstad et al., 2011). Considering the WH-R model, we hypothesize that FWC induces rumination about the demands and problems associated with the family domain, which will consume one's limited personal resources, such as energy and attention (ten Brummelhuis & Bakker, 2012; Du et al., 2018). This depletion of resources will result in individuals' not possessing the necessary cognitive resources to perform innovatively (Hogart, 1987), thus, resulting in decreased IWB.

Accordingly, the third prediction of our work is as follows:

Hypothesis 3: Rumination mediates the negative relationship between family- work conflict and innovative work behaviors.

Method

Sample and Procedures

To collect the data, we sent a private message via LinkedIn inviting people to participate in a three-wave study, each wave separated by two weeks. Drawing on past research (Aryee, Fields, & Luk, 1999), we made no restrictions regarding demographic characteristics. This approach may provide benefits to the generalizability of our findings (Lian, Brown, Ferris, Liang, Keeping, & Morrison, 2014)

In the first message, a link to the first online survey was provided as well as a brief description of our study. Confidentiality of responses was assured. However, for matching purposes between surveys, we asked participants to create a personal code (year of birth + last 3 digits of phone number) and to provide email contact information in order to receive the next surveys.

In time 1 (T1), we sent a total of 12420 private messages, from which 1067 individuals opened the link to the first survey. Four hundred and ninety-six surveys were discarded because they were incomplete, or no email contact was provided. This was essential to meet the purpose of the study. Our final sample of T1 was composed by 571 surveys.

Two weeks after (i.e., T2), we sent another email to the valid participants in T1, with a link for the second survey. 512 individuals opened the link to the second survey. Ninety-three individuals did not provide the email to participate in the third survey. Three days after messages were sent, we sent a new message to participants who did not respond, reminding them of the importance for the study of answering all surveys and providing again the link to the second survey. Our final sample of T1 and T2 was 419 surveys.

Two weeks after T2 (i.e., four weeks after T1) we sent a third email to the participants, asking for their collaboration in the final survey of the study. The importance of the collaboration in the 3 surveys was reinforced and we followed the same procedure used in Time 2 regarding non responses. We received 331 surveys at T3 (response rate of 58 % considering T1). Our final sample (i.e., T1, T2 and T3) was of 322.

Their demographics were as follows: participants were on average 37.3 years old (S.D. = 10.9) and 48.9% had masters' degree or higher. Regarding gender and marital status, 50.5% were female and 46.6% were married, respectively. 49.5% had children and 27.4 % of the final sample had more than one child. Tenure with supervisor was 3.6 years (S.D. = 5). Concerning the industry in which they worked, 37.9% were from the financial sector, 12% were from information and communication, 5.8% were from wholesale and retail trade, 4.5% percent were from administrative and support service activities, 4.5% were from professional, scientific and technical activities, 3.9% were from the education sector and 9.4% did not provide this information. Other occupations included accommodation and food services; agriculture, forestry and fishing; real state activities; public administration and defense; transportation and storage; construction and arts and entertainment.

Measures

Demographic variables and FWC were assessed in Time 1 (T1); Work engagement and rumination were assessed in Time 2 (T2) and IWB were assessed in Time 3 (T3).

Control Variables

Age was based on self-reported age and was coded in years; Gender was coded as 0 for man and 1 for woman; Marital status was coded as 1 for married, 2 for single, 3 for divorced and 4 for widow(ed); Educational level was coded into 6 categories ranging from 1 to 6; Parenthood was coded as 1 for having no children and 2 for being a parent; Number of children was based on self-reported data and coded in years; Age of the youngest child was based on self-reported data and further coded by the authors into 5 categories ranging from 1 to 5. Tenure with supervisor was based on self-reported tenure in the persons' current job.

Family-Work Conflict.

We assessed FWC using the Carlson, Kacmar and Williams' (2000) Work-Family Conflict Scale. The original measure considers the 2 directions of work-family conflict: work-family conflict and family-work conflict. This scale includes subscales to assess the 3 aspects of the conflict (time, strain and behavior-based). Drawing on the WH-R model (ten Brummelhuis & Bakker, 2012), we only used the 6 items for time and strain- based FWC. Responses were recorded using a 5-point

scale, ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item is “Due to stress at home, I am often preoccupied with family matters at work”. Cronbach alpha was $\alpha=.80$.

Work Engagement.

We measured work engagement using the 9 items of the Utrecht Work Engagement Scale- 9 (UWES-9) developed by Schaufeli, Bakker and Salanova (2006). The scale includes subscales for vigor (3 items; sample item: “At my work, I feel bursting with energy”), dedication (3 items; sample item: “I am enthusiastic about my job”) and absorption (3 items; sample item: “I get carried away when I am working”). Responses were recorded using a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach alpha was $\alpha=.90$.

Rumination.

To assess rumination, we used 7 items of the Rumination- Reflection Questionnaire (RRQ) developed by Trapnell and Campbell (1999). In the light of the method used by Rhoades, Eisenberger, & Armeli (2001), we used the 7 items with higher factor loadings and adapted those items to refer to family problems (eg. “I tend to ruminate or dwell over things that happen to me for a really long time afterward” was changed to “I tend to ruminate or dwell over family problems that happen to me for a really long time afterward”). Responses were recorded using a 5-point scale, ranging from 1 (Never) to 5 (Very Frequently). Cronbach alpha was $\alpha=.86$.

Innovative Work-Behaviors.

To assess innovative work-behaviors, we used the 9- item scale developed by Janssen (2000). Participants were asked to rate the frequency of which they did the listed behaviors. A sample item is “Creating new ideas for difficult issues”. Responses were recorded using a 5-point scale, ranging from 1 (Never) to 5 (Very Frequently). Cronbach alpha was $\alpha=.93$.

Results

Table 1 presents the descriptive statistics, correlations and reliabilities. We used bootstrapping analysis to test our hypotheses (SPSS macro, PROCESS, model 4; Hayes,2012). Bootstrapping is a resampling strategy for hypothesis testing where the variables of interest are calculated in multiple resamples of the data set (Preacher, Rucker & Hayes, 2007). The use of bootstrapping to assess indirect effects is widely supported (Bollen & Stine, 1990; Lockwood & MacKinnon, 1998) and more recently recommended by Shrout and Bolger (2002) to assess mediation for small to medium size samples. Prior to the analysis, FWC, work engagement, rumination and IWB were mean centered to improve the interpretability of the regression coefficients and reduce multicollinearity (Cohen, West & Aiken, 2003). Results are presented in Table 2.

Hypothesis 1 (H1) predicted that FWC (T1) would be negatively associated with IWB, four weeks after (i.e., T3). According to our results, we did not find support for this hypothesis ($B=-0.02$; CI $[-0.15; 0.1]$). Thus, H1 was not supported.

Table 1: Descriptive statistics, reliabilities and zero-order correlations (N=306)

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Family-Work Conflict (T1)	2.01	.78	(.80)											
2. Work Engagement (T2)	3.54	.69	-.17**	(.86)										
3. Rumination (T2)	2.48	.73	.36**	-.23**	(.86)									
4. Innovative Work Behaviors (T3)	3.14	.80	-.05	.34**	-.09	(.93)								
5. Gender	-	-	.08	-.11	.06	.01	-							
6. Age	37.27	10.92	-.02	.23**	-.10	.05	-.18**	-						
7. Marital Status	-	-	-.06	-.09	.06	-.07	.11*	-.16**	-					
8. Educational Level	-	-	.00	-.01	-.01	.04	.14*	-.27**	.00	-				
9. Parenthood	-	-	.10	.18**	-.04	.10	-.16**	.70**	-.30**	-.27**	-			
10. Number of Children	.83	1.23	.04	.13*	.01	.07	-.11	.48**	-.21**	-.22**	.68**	-		
11. Age of the youngest child	.79	1.29	.01	.19**	-.01	.01	-.09	.63**	-.11*	-.17**	.62**	.55**	-	
12. Tenure with supervisor	3.57	4.97	.06	.09	-.01	.10	-.04	.42**	-.04	-.13*	.30**	.25**	.26**	-

Note: N= 306, T1= Time 1; T2= Time 2; T3= Time 3; Cronbach's alpha reported on the diagonal; * p < .05; ** p < .01

We predicted that work engagement (T2) would mediate the negative relationship between FWC (T1) and IWB (T3), i.e., H2. We found that FWC (T1) was negatively associated with work engagement (T2) (B=-0.14; CI [-0.24; -0.05]), which predicted IWB (T3) (B= 0.37; CI [0.24; 0.51]). The indirect effect of FWC on IWB, i.e., via work engagement, was significant (B= -.05; CI [-.10; -.01]). These findings support that FWC has significant lagged effects on IWB through work engagement. Thus, H2 was supported.

In H3 we predicted that rumination (T2) would mediate the negative relationship between FWC (T1) and IWB (T3). The results did not support our predications. We found that FWC (T1) was positively associated with rumination (T2) (B= 0.33; CI [0.23; 0.43]), but rumination did not predict IWB (T3) (B= -0.02; CI [-0.15; 0.1]). The indirect effect of FWC on IWB, i.e., via rumination, was not significant (B= -.01; CI [-.06; .04]). Thus, Hypothesis 3 was not supported.

Table 2: Bootstrapping Analysis Results

Predictors	Outcomes								
	Work Engagement (T2)			Rumination (T2)			Innovative Work Behaviors (T3)		
	(mediator)			(mediator)					
	B	t	95%CI	B	t	95%CI	B	t	95%CI
VI: Family-Work Conflict									
<i>Control Variables</i>									
Age	.01	1.76	[-.01; .02]	-.01	-1.38	[-.02; .04]	-.01	-1.29	[-.02; .00]
Gender	-.09	-1.18	[-.25; .60]	.01	.07	[-.16; .17]	.04	0.42	[-.14; .22]
Marital Status	-.06	-1.02	[-.18; .60]	.08	1.32	[-.04; .21]	-.02	-0.32	[-.16; .11]
Educational Level	.04	.85	[-.05; .12]	-.03	-.56	[-.12; .06]	.05	1.02	[-.05; .15]
Parenthood	.02	.14	[-.25; .29]	-.04	-.28	[-.33; .25]	.22	1.40	[-.09; .53]
Number of Children	-.02	-.41	[-.10; .68]	.04	.94	[-.05; .13]	.02	0.31	[-.08; .11]
Age of the youngest child	.05	1.23	[-.03; .13]	.02	.49	[-.07; .11]	-.06	-1.15	[-.15; .04]
Tenure with supervisor	.00	.28	[-.01; .02]	.00	-.22	[-.02; .02]	.01	1.38	[-.01; .03]
<i>Main Effects</i>									
Family-Work Conflict (T1)	-.14	-2.88**	[-.24; -.05]	.33	6.11**	[.22; .43]	-.02	-0.4	[-.15; .10]
<i>Mediator</i>									
Work Engagement (T2)							.37	5.43**	[.24; .51]
Rumination (T2)							-.02	-.38	[-.15; .10]
R^2	.32(F=3.46; p<.01)			.37(F=5.01; p<.01)			.35(F=3.68; p<.01)		

Note: Tabled values are unstandardized regression coefficients; T2= Time 2; T3= Time 3; ** p < .01

Discussion

The purpose of the present study was to investigate the effect of FWC on IWB. Based on past research, we proposed that (i) FWC had a negative direct effect on IWB; (ii) the negative relationship between FWC and IWB was mediated by work engagement (affective- motivational mechanism); and that (iii) the negative relationship between FWC and IWB was mediated by rumination (cognitive mechanism). To test our hypotheses, we used a time-lagged panel design.

Our results demonstrated that work engagement mediates the negative relationship between FWC (T1) and IWB (T3), showing that experiencing higher levels of FWC leads to lower levels of engagement, which in turn leads to decreased IWB. As FWC increases, individuals are required to devote more energy and psychological resources to deal with this demand. Work engagement requires individuals to devote their complete self (defined in terms of cognitive, physical and emotional energies) to their work (Kahn, 1990). As resources are used, individuals are left with fewer resources which may affect their ability to stay engaged in their work roles. Less engaged employees will not have the necessary ability to deal with the uncertain and demanding context of innovation. Additionally, employees may try to avoid further losses of resources (Hobfoll, 1989) and disengage from IWB. Overall, our results suggest a harmful effect of FWC on IWB through a decrease of employees' work engagement.

Our results strengthen previous studies on work-family conflict and depletion of resources, providing support for the Work-Home Resources model, suggesting that FWC will induce a loss of personal resources, reducing their availability for individuals to perform up to their best capabilities in the work domain (Demerouti, Taris, & Bakker, 2007 ; Johnson et al., 2018) Additionally, our results strengthen previous research on the impact of the family domain on work

engagement (Lu, Siu, Chen, & Wang, 2010) and reinforce the importance of work engagement for innovation and performance at work (Rich et al., 2010; Kwon & Kim, 2019)

However, we did not find evidence for the proposed mediation effect of rumination. Experiencing FWC (T1) did significantly predict rumination (T2), supporting the idea that people tend to ruminate about the causes of the conflict, its consequences and characteristics. However, increased rumination (T2) did not significantly relate to IWB (T3).

The results suggest that preoccupation and strain originated in the family domain spillover to the work domain as employees tend to ruminate about family problems while at work, supporting the results found by Du, Derks & Bakker (2018). Surprisingly, the allocation of cognitive resources such as energy and attention to deal with the demands imposed by the employees' family role did not result in decreased innovative behaviors while in the workplace. These findings suggest that the link between FWC and IWB may operate differently through motivational-affective mechanisms and cognitive mechanisms.

Theoretical Implications

Our research makes several theoretical contributions. First, FWC is recognized as less prevalent and less studied than work-to-family conflict (Bagger et al., 2008). By addressing FWC and its relationship with IWB, we contribute to further understanding on the outcomes of this conflict, especially regarding its potential harmful effect in the individuals' work role.

Second, the present study integrated the temporal nature of FWC. Previous studies recognize the prevalence of cross-sectional studies both on the work-family and the innovation literature

(Anderson et al., 2004; Amstad et al., 2011). The use of a time-lagged panel design allows us to make stronger inferences about the relationship between FWC and IWB (Zablah, Carlson, Donovan, & Maxham, 2016).

Third, previous research points employees' well-being as the most studied outcome of FWC (Demerouti et al., 2007). Thus, the present study provides a further analysis of the potential outcomes of FWC, especially in an area of crucial importance for organizations survival and competitiveness such as innovation.

Finally, few studies have evaluated the impact of FWC on IWB (Choi et al., 2017). Our research makes unique contributions by exploring two mechanisms through which FWC interferes with employees' performance in their work role, namely, with IWB. We evaluated work engagement (motivational-affective mechanism) and rumination (cognitive mechanism) as possible mediators in our model. The results suggest that the motivational-affective mechanism better explains the relationship between FWC and IWB.

Practical Implications

Our findings suggest that FWC may impact individuals' IWB through their work engagement. Considering the Work-Home Resources model, our findings support the notion that losses in individuals' personal resources due to FWC will leave insufficient resources for them to stay engaged in their work roles and consequently to exhibit IWB. This way, organizations should be aware that employee's family lives interact with their work roles and that providing significant and usable resources may buffer the negative impact of family demands in the work role.

Past research shows that the implementation of family-friendly policies may be an important instrument to promote employees' ability to combine their family and work roles (Demerouti et al., 2007). In this context, immediate supervisors are in an important position to help employees to manage the impact of their family responsibilities in the workplace. This way, organizations should provide training for supervisors to ensure that they are aware and able to address employees' struggles to balance their work and family roles.

Drawing on the Work-Home Resources model, interventions aimed at increasing employee's personal and job-related resources can have a positive impact in their work engagement and buffer the negative effect of FWC. At the individual level, organizations may implement programs such as mindfulness training, which may reduce employees' feelings of FWC and improve their concentration. These programs are expected to increase employees' work engagement. Additionally, it is of crucial importance that employees are informed about organizational policies that promote work-family balance, so that they can make full use of the resources and benefits offered by the organization.

However, it is important to recognize that interventions may be more effective for some employees than others. As reported by Hammer, Kossek, Anger, Bodner, & Zimmerman (2011), family-supportive supervision training interventions, although leading to positive health and work outcomes for individuals with higher levels of FWC, were associated with negative outcomes for individuals with lower levels of FWC. These results could represent employees' feelings that the organization is providing resources that they will not be able to use, perceiving it as unfair and leading to negative outcomes such as lower engagement in their work tasks.

Limitations and Future Research

Our study is not without limitations. The collected data results from convenience sampling in the Portuguese context, which may have two potential limitations. First, the generalizability of our findings may be limited. By only examining the Portuguese business environment, our study is not able to reflect or consider different working cultures, which could have potential different results as the importance and balance of work and family roles may differ from country to country (Allen, French, Dumani, Shockley, 2015). Xia, Zhong, Wang, & Tiong (2017) reinforce the importance of considering differences in national contexts when evaluating the consequences of the conflict between the work and family domains. The replication of our findings in different countries would enrich existing literature

Secondly, drawing on past research pointing random sampling to lead to a greater generalizability of findings (Lian et al., 2014), no sampling restrictions were made. However, there is a considerable percentage of respondents who work in the financial sector. This may limit our understanding of the interaction of FWC and IWB on different occupational areas. Past research shows that employees may be less motivated to be innovative in jobs where innovation is not a requirement (Yuan & Woodman, 2010). Further research should focus on specific sectors of activity, especially jobs where innovation is required and seen as a part of the job.

Another important limitation of our study emerges from use of self-reported data, which could lead to inflated relationships due to common-method bias (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). We tried to minimize this effect by collecting data in three waves with a two-weeks interval between them. Considering that participants may classify their innovative work behaviors higher

than managers would do (Taris, 2006), we recommend future research to incorporate other reports such as supervisor assessed IWB.

Additionally, although we chose to focus on the cross-domain hypothesis, no outcomes relative to the family domain were evaluated, making it impossible to compare it with the matching hypothesis. Future research could provide further evidence on this ongoing debate by including family-related and work-related outcomes.

Conclusion

This study, based on the Work-Home Resources model, aimed to show how FWC affects employees' IWB through work engagement and rumination. The results provide support for a motivational-affective mechanism as the link between the family and the work domains. We hope that our findings do not only allow and motivate future research to address the mechanisms through which family and work interact to produce work-related outcomes, but also that they foster organizations' understanding of the impact that employees' family lives produce in the workplace and increase their capability to successfully conduct work-family balance interventions.

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