

Domain Satisfaction as a Mediator of the Relationship Between Work–Family Spillover and Subjective Well-Being: A Longitudinal Study

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Abstract

Purpose Despite greater recognition that public and workplace policies are needed to facilitate work–family integration, scarce evidence exists on whether and how work–family spillover relates to future subjective well-being (SWB). Guided by conservation of resources theory and bottom-up theories of SWB (i.e., domain-specific satisfaction serves as a source of overall SWB), we investigated the relationship between work–family spillover and future life satisfaction and the potential mechanisms of the relationship (job and marital satisfaction). The relative contribution of positive and negative work–family spillover to SWB was also examined.

Design/Methodology/Approach Lagged analyses were conducted on self-reported data from a representative U.S. sample over a 9-year interval ($N = 2588$).

Findings Individuals who experienced negative work-to-family spillover were less satisfied with their life at a 9-year follow-up, whereas those who experienced positive family-to-work spillover reported higher life satisfaction at the follow-up. These prospective associations remained significant when considering other established predictors of life satisfaction (baseline life satisfaction, health, gender, income, and personality) and were mediated by job satisfaction and marital satisfaction.

Implications This study provides empirical evidence for ongoing advocacy for working families, suggesting that

policies that facilitate positive family-to-work spillover and minimize negative work-to-family spillover should be regarded as essential to enhance SWB of individuals in our society in the long run.

Originality/Value This study expands our understanding of the causal relationship between work–family spillover and life satisfaction by considering both positive and negative spillover and demonstrating the mechanisms by which work–family spillover relates to future life satisfaction, even beyond personality, health, and income.

Keywords Work–family spillover · Life satisfaction · Job satisfaction · Marital satisfaction · Longitudinal

Introduction

With the changing face of work, many families are confronted with challenging demands from work and family domains. As such, there is greater recognition that public and workplace policies (e.g., paid family leaves, flexible working arrangements) are needed to facilitate work–family integration. For example, policies aimed at reconciling professional and private life are considered a necessity for sustainable growth and social integration (European Commission 2006, 2008, 2011). Similarly, the President of the United States highlighted the importance of supporting working families to better balance work and family lives, stating that family-friendly workplace policies are basic needs (The White House 2010, 2014). Underlying this discourse is an assumption that the successful integration of work and family lives would help improve subjective well-being (SWB), which is a global assessment of all aspects of a person's life. Yet, does the successful integration of work and family actually matter for the SWB of workers?

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Work–family research has demonstrated that both positive and negative interactions between work and family domains are associated with individuals' well-being (for reviews, see Amstad et al. 2011; McNall et al. 2010). It has also been recognized that balance between multiple domains of life (e.g., work, family) is central to the study of the SWB (Sirgy and Wu 2009). Nevertheless, much remains to be learned regarding how work–family interaction leads to SWB because scarce research exists on the mechanisms underlying the relationships between work–family spillover and SWB (Nohe et al. 2015) and the majority of previous research has been cross-sectional (Casper et al. 2007). In particular, relatively little is known about whether and how positive work–family interaction relates to future SWB.

The objective of this study was to examine whether and how work–family spillover relates to future SWB, specifically life satisfaction; among various indices of SWB (e.g., psychological and physical strain, positive and negative affect, etc.; Diener 1984; Diener et al. 2006), we focus on life satisfaction because it is a core indicator of SWB (Linley et al. 2009). Guided by conservation of resources theory (COR; Hobfoll 1989) and bottom-up theories of SWB (Diener 1984), we investigated the relationship between work–family spillover and future SWB and the potential mechanisms of the relationship (job satisfaction and marital satisfaction). Also, we explored the relative contribution of positive and negative work–family spillover to SWB based on the primacy of resource loss principle posited by COR (Hobfoll 2011) and negativity bias (Baumeister et al. 2001). To address these research questions, we utilized an archival dataset, which contains fully crossed longitudinal data from a large representative sample of the United States (the National Survey of Midlife Development in the United States). Although longitudinal research does not provide conclusive evidence for causality, it is more informative than correlational research in that the problem of reverse causation can be reduced with longitudinal design (Zapf et al. 1996). Fully cross-lagged panel design also allows us to investigate lagged and cross-lagged relations while taking stability of variables and concurrent relations into consideration (Schnabel 1996). We provide a stronger test of causality by controlling other potential causal variables (i.e., known predictors of life satisfaction) in our analyses (Lyubomirsky et al. 2005).

Our study makes several important contributions. First, we answer the call for more research that investigates the relationship between work-related antecedents and life satisfaction (Erdogan et al. 2012). Identifying additional predictors of life satisfaction contributes to the SWB literature as well because SWB is determined by multiple factors (e.g., personal income, health, personality; Diener et al. 1999). Second, although positive and negative work–

family spillover are independent processes that likely co-occur (Greenhaus and Powell 2006), only a few studies to date have simultaneously considered both in relation to SWB (e.g., Graves et al. 2007; Hecht and McCarthy 2010; Karatepe and Bekteshi 2008). By investigating the relative impact of positive and negative spillover on prospective SWB, we test COR's principle that has not been tested in the work–family context (i.e., the primacy of resource loss principle). Third, our study provides a formal test of the indirect effect of work–family spillover on SWB posited by previous research; work–family interaction relates to the degree of domain satisfaction (Amstad et al. 2011; McNall et al. 2010) and domain satisfaction is a critical source of overall life satisfaction (Tay and Kuykendall 2013), thereby answering the call for more research on the underlying mechanisms for the relationship between work–family interface and well-being outcomes (Nohe et al. 2015). Although some evidence exists to support the indirect effect of negative work–family spillover on well-being (e.g., Frone et al. 1992; Grandey and Cropanzano 1999), empirical evidence is lacking for the case of positive work–family spillover.

On a practical side, demonstrating a longitudinal link between work–family spillover and SWB would provide empirical support for ongoing advocacy for working families (e.g., The White House Summit on Working Families). Findings of our study could also help designing more effective organizational development programs to promote work–family integration (e.g., family-supportive supervisor training, Hammer et al. 2011). For example, if negative, but not positive, work–family spillover is shown to relate to future life satisfaction, organizations could be informed to direct their resources to reduce negative work–family spillover.

Work–Family Spillover and SWB

Spillover is a linking mechanism by which work and family influence each other (Edwards and Rothbard 2000). Spillover occurs in two directions such that work experiences can affect family (work-to-family spillover) and experiences from family can affect work (family-to-work spillover). The nature of spillover can be negative or positive (i.e., valence of spillover). Negative spillover occurs when experiences in one domain that are carried over inhibit the fulfillment of demands in the other domain. Conversely, positive spillover occurs when experiences that are transferred from one domain improve the performance in the other domain. For example, negative/positive mood from family may frustrate/facilitate interaction with customers, thereby inhibiting/improving job performance. Considering both direction and valence, four work–family spillover constructs exist: positive work-to-family spillover, positive

family-to-work spillover, negative work-to-family spillover, and negative family-to-work spillover.

Conservation of resources theory (COR; Hobfoll 2002) provides a theoretical framework for the relationship between work–family spillover and SWB. COR suggests that individuals strive to gain, protect, and maintain resources. Resources encompass objects (e.g., a house), personal characteristics (e.g., self-esteem), conditions (e.g., being married), or energies (e.g., vigor, time) that are valued and sought. According to COR, obtaining, utilizing, and maximizing the resources increase stress-resistance, leading to positive consequences for SWB (Hobfoll 1989). Furthermore, resources are thought to serve as a means for obtaining other valued resources (i.e., resource caravan; Hobfoll 2002), thereby enhancing SWB. Positive work–family spillover signals gain of resources as it occurs when resources generated in one domain are transferred to another domain and lead to positive outcomes (Hakanen et al. 2011; Wayne et al. 2007). As such, positive work–family spillover is hypothesized to increase SWB.

To date, only a few empirical studies have investigated the longitudinal relationship between positive work–family spillover and SWB. In support of COR, Innstrand et al. (2008) found that positive work–family spillover predicts reduced burnout at a 2-year follow-up. Similarly, Hakanen et al. (2011) reported that positive work–family spillover related to better domain-specific well-being (work engagement and marital satisfaction) at a 3-year follow-up. On the contrary, Hammer et al. (2005) found that positive work–family spillover does not predict depression measured 1 year later. Based on COR and the available empirical evidence, we expect that positive work–family spillover, in both directions, relates to higher SWB in the future.

COR has also been applied to explain the relationship between negative spillover and SWB. COR posits that actual as well as potential loss of these resources causes the experience of stress, resulting in negative consequences for SWB (Hobfoll 1989). Negative work–family spillover signals loss of these resources because it reflects a situation where an individual has insufficient resources to deal with multiple demands from work and family domains (Grandey and Cropanzano 1999). It may also depict a threat of resource loss. For example, an individual whose negative moods from work spill over into family domain might perceive it as a threat that harms his relationship with his family members. As such, negative work–family spillover is hypothesized to lower SWB.

Empirical research on the longitudinal relationship between negative work–family spillover and SWB has yielded inconsistent results. The previous studies frequently examined work–family conflict (WFC), which

occurs when pressures from work and family roles are incompatible with each other (Greenhaus and Beutell 1985); WFC is closely related to negative work–family spillover in that spillover explains the linkage between work and family as to how an individual's efforts to fulfill one role may interfere with another role, thereby creating inter-role conflicts. Some studies found a significant relationship between WFC and future SWB in support of COR (e.g., Grant-Vallone and Donaldson 2001; Innstrand et al. 2008; Knecht et al. 2011), but others reported a non-significant relationship between the two (e.g., Kelloway et al. 1999; Rantanen et al. 2008). More recently, Matthews et al. (2014) found that although WFC had an immediate, negative effect on SWB, its impact on SWB was positive at a six-month follow-up such that WFC positively related to SWB when concurrent WFC and past SWB were taken into account. Thus, this study demonstrated that WFC might not alter future SWB insofar as individuals adapt to WFC and exhibit resilience. Synthesizing this line of research, a recent quantitative review of longitudinal studies on the WFC-strain (i.e., psychological, behavioral, and physiological reactions to environmental demands) relationship reported that WFC and strain have a symmetric reciprocal relationship, although the effect sizes were relatively small (Nohe et al. 2015).

Our study extends the recent developments in the literature in several ways. First, we incorporate a direct measure of SWB (life satisfaction). Given that various indices of SWB might differ in the degree of resistance to change or temporal trajectories (Tucker et al. 1998), further investigation with other indices of SWB is warranted (Matthews et al. 2014). We believe that examining life satisfaction as an outcome of work–family interface is important because life satisfaction is a key indicator of an individual's overall well-being (Linley et al. 2009) and is of growing interest to organizational scientists (Erdogan et al. 2012) and policy makers (De Neve et al. 2013; Diener and Seligman 2004). Also, the scope of our investigation is broader; we study both positive and negative work–family spillover and explore the mediating effects of domain satisfactions. Lastly, we adopt a longer time interval of 9 years. Despite the importance to examine the longitudinal WFC-SWB relationship with varying time lag, studies having longer than a one-year lag have been particularly scarce (Rantanen et al. 2008). Notably, most studies reviewed in Nohe et al. employed a relatively shorter time frame (less than a year), leaving a question regarding the WFC-SWB relationship with a longer time frame. Findings from our study would advance the current understanding on how the relationship between work–family spillover and SWB changes over time.

Hypothesis 1 Positive work–family spillover at Time 1, in both directions, positively relates to life satisfaction at Time 2.

Hypothesis 2 Negative work–family spillover at Time 1, in both directions, negatively relates to life satisfaction at Time 2.

The Relative Impact of Positive and Negative Spillover

Scholars emphasized that positive and negative work–family spillover are independent experiences that may coexist, rather than the opposite of each other (Greenhaus and Powell 2006). That is, the presence of positive (negative) spillover does not necessarily mean the absence of negative (positive) spillover. Therefore, it is important to consider both positive and negative work–family spillover in studying their impact on SWB and to examine whether they differ in terms of the strength of their relationship with SWB.

We propose that negative spillover has a stronger relationship with SWB than does positive spillover. The primacy of resource loss principle posited by COR states that the prominence of resource loss versus gain is disproportional such that resource loss tends to be more salient than resource gain (Hobfoll 2011). Due to the domination of resource loss, gaining resource can be difficult when resource loss is evidenced. Research on negativity bias corroborates the notion that negatively valenced events tend to have a greater impact on the individual than positively valenced events of the same type (Baumeister et al. 2001). Detrimental effect of negative events often outweighs beneficial effect of positive events because bad events have longer lasting and more intense consequences than good events. Relevant to the current study, negative life events have been found to exert a stronger effect on SWB compared to positive life events (e.g., Gomez et al. 2009).

Although only a few studies have simultaneously examined positive and negative work–family interface in relation to life satisfaction (e.g., Graves et al. 2007; Hecht and McCarthy 2010; Karatepe and Bekteshi 2008), the results demonstrated that correlation coefficients tend to be larger for the relationship of life satisfaction with negative interface than for the relationship with positive interface. In a similar vein, evidence suggests that SWB levels can change over time when significant life events occur, especially when individuals undergo negative life events (Baumeister et al. 2001; Tay and Kuykendall 2013). For example, longitudinal studies have found that negative life events such as divorce (Lucas 2005) and unemployment

(Lucas et al. 2004) can permanently alter SWB levels, whereas adaptation appears to occur with a positive event such as marriage (Lucas and Clark 2006). In sum, we propose that negative work–family spillover has a stronger impact on SWB than does positive work–family spillover.

Hypothesis 3 For a given direction, negative work–family spillover has a stronger longitudinal relationship with life satisfaction than does positive work–family spillover.

Domain Satisfaction as a Mediator

Most research to date has focused on the direct relationship between work–family spillover and well-being outcomes (Nohe et al. 2015). However, existing evidence suggests that the effect of negative work–family spillover on SWB may be indirect (e.g., Frone et al. 1992; Grandey and Cropanzano 1999). Based on COR (Hobfoll 1989, 2011) and bottom-up theories of SWB (Diener 1984), we propose that domain satisfaction mediates the spillover–SWB relationship. Regarding the spillover–domain satisfaction link, COR states that resource loss brings about negative consequences (e.g., suboptimal performance and well-being), whereas resource gain causes positive consequences (e.g., superior performance and well-being). These outcomes are often experienced in major life domains (i.e., work and family); negative/positive spillover occurs when experiences in one domain provide insufficient/abundant resources for another domain. As such, individuals' satisfaction within each domain is likely to be affected. Supporting this notion, research has consistently shown that individuals who experience negative work–family spillover are less satisfied with work and family domains (Amstad et al. 2011). Likewise, individuals who experience positive work–family spillover report higher job and marital satisfaction (McNall et al. 2010).

Domain satisfaction is, in turn, expected to contribute to SWB. This idea is grounded on bottom-up theories of SWB. According to the bottom-up theories of SWB, a person's domain-specific evaluation serves as a robust source of overall life satisfaction (Campbell 1981; Diener 1984; Erdogan et al. 2012). In other words, the reduced domain satisfaction is expected to lower SWB, whereas improved domain satisfaction is likely to heighten SWB. Empirical research has demonstrated that domain satisfaction feeds into SWB (Campbell 1981; Tay and Kuykendall 2013). Taken together, we hypothesize that job and marital satisfaction mediate the longitudinal relationship between work–family spillover and life satisfaction. Figure 1 depicts hypothesized relationships among study variables.

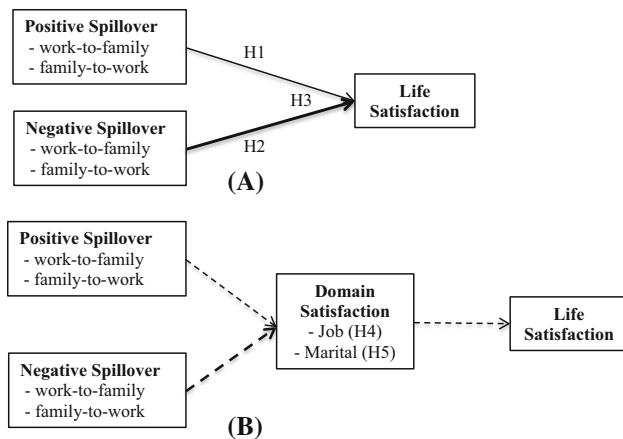


Fig. 1 Hypothesized relationships among work–family spillover, domain satisfaction, and life satisfaction. The width of arrows indicates the strength of the relationship. Dotted lines indicate mediated relationships

Hypothesis 4 Job satisfaction fully mediates the longitudinal relationship between work–family spillover and life satisfaction.

Hypothesis 5 Marital satisfaction fully mediates the longitudinal relationship between work–family spillover and life satisfaction.

Method

Participants and Procedure

We used data from the National Survey of Midlife Development in the United States (MIDUS) collected in 1995–1996 (MIDUS I; $N = 7108$; Time 1) and followed up in 2002–2006 (MIDUS II; $N = 4963$; Time 2). The average time lapse between the two interviews (calculated based on age difference on the two interviews) was 9.0 years ($SD = .64$, $Min = 7$, $Max = 11$). More information on the sampling and survey procedures can be obtained from the MIDUS website (<http://www.midus.wisc.edu/>). For our analysis, data from a subset of 2588 participants who were working in both waves and were polled on life satisfaction in the second wave were used. Our sample had an average age of 44.11 ($SD = 10.67$) and had an equal gender distribution (Males = 47.8 %; Females = 51.1 %; Non-response = 1.1 %).

Measures

Work–Family Spillover

Work–family spillover was assessed in both waves (Grzywacz and Marks 2000). Examples include “your job

reduces the effort you can give to activities at home” (negative work-to-family spillover), “the things you do at work help you deal with personal and practical issues at home” (positive work-to-family spillover), “responsibilities at home reduce the effort you can devote to your job” (negative family-to-work spillover), and “talking with someone at home helps you deal with problems at work” (positive family-to-work spillover). Each subscale was measured using four items on a 1 (*all the time*) to 5 (*never*) scale and was calculated by averaging the reverse-coded values of all items so that higher values represent more spillover. The scale reliabilities ranged from .73 to .81 at Time 1 and .70 to .81 at Time 2.

Life Satisfaction

The SWB indicator, life satisfaction, was measured in both waves using a single indicator “How would you rate your life overall these days?” on a 0 (*the worst possible*) to 10 (*the best possible life*) scale (Prenda and Lachman 2001). While life satisfaction was measured using a 5-item in MIDUS (Time 1 $\alpha = .67$ and Time 2 $\alpha = .65$), it is based on an aggregation of domain satisfactions and overall satisfaction, two of which were job and marital satisfaction. Considering this potential methodological confound, we used the single item that assesses the overall evaluation of one’s life. Past research has shown that a single-item life satisfaction variable is reliable and valid (Diener et al. 2013; Schimmack and Oishi 2005).

Job Satisfaction

Job satisfaction was measured at Time 2 using a single indicator “How would you rate your work these days?” on a 0 (*the worst possible*) to 10 (*the best possible*) scale (Prenda and Lachman 2001). Past research has shown that a single indicator of job satisfaction is reasonably reliable (Wanous et al. 1997).

Marital Satisfaction

Marital satisfaction was measured at Time 2 using a single indicator “How would you rate your relationship with spouse/partner these days?” on a 0 (*the worst possible*) to 10 (*the best possible*) scale (Prenda and Lachman 2001).

Control Variables

We controlled several variables that are known to predict life satisfaction (Diener et al. 1999), including past life satisfaction (measured at Time 1). Self-reported physical health was measured using a single item on a 1 (*poor*) to 5 (*excellent*) scale. The Big-5 personality was assessed using 25 self-

descriptive adjectives (Lachman and Weaver 1997). Examples include “worrying” (Neuroticism; $\alpha = .74$), “outgoing” (Extraversion; $\alpha = .78$), “broad-minded” (Openness; $\alpha = .77$), “responsible” (Conscientiousness; $\alpha = .58$), and “warm” (Agreeableness; $\alpha = .81$). Personal income was operationalized as personal income over the past 12 months. There were a total of 31 income categories ranging from 1 = “less than \$0/loss”, 2 = “\$0/none”, to 31 = “\$100,000 or more.” Finally, gender (1 = Male, 2 = Female) was controlled for. All control variables were measured at Time 1.

Analysis

Multiple Regression

To examine the effects of positive and negative spillover on future (Time 2) life satisfaction (Hypotheses 1 and 2), we used multiple regression controlling for past life satisfaction (Time 1), physical health, personality, income, and gender. We further compared positive versus negative spillover in the same direction to examine their relative impact on life satisfaction (Hypothesis 3).

Path Analysis

To test the mediating effects of domain satisfactions between spillover and life satisfaction (Hypotheses 4 and 5), we used path analysis using maximum likelihood estimation in Mplus 7.0. We specified Time 2 job satisfaction and marital satisfaction as mediators. In addition, we also specified Time 2 positive and negative work–family spillover as mediating variables.¹ In this manner, we can determine whether the mediating effects of domain satisfactions occur above and beyond the consistency effects of work–family spillover over time. All mediators were allowed to correlate as this is common practice that ensures accurate estimation when there is more than one mediator (e.g., Preacher et al. 2010). We also controlled for Time 1 life satisfaction, job satisfaction, marital satisfaction, physical health, personality, income, and gender in our model. This model is a longitudinal lagged model in that we included all key variables of interest—work–family spillover, domain satisfactions, and life satisfaction (Time 1 domain and life satisfaction as controls)—at both time points.

Results

Descriptive statistics and correlations for our study variables are presented in Table 1. Hypotheses 1 and 2 stated that positive and negative work–family spillover, in both

directions, relate to future life satisfaction. All four work–family spillover constructs at Time 1 had a significant zero-order correlation with life satisfaction at Time 2, with the correlation coefficients ranging from .13 to .23. The effect sizes for the longitudinal relationships were comparable to the concurrent relationships between spillover and life satisfaction that ranged from .12 to .29. To further probe this longitudinal link, we ran multiple regression controlling for other known predictors of SWB (i.e., past SWB, health, income, gender, and personality; Diener et al. 1999). As shown in Model 2 in Table 2, positive family-to-work spillover and negative work-to-family spillover remained as significant predictors of future life satisfaction after the control variables entered. Notably, standardized beta-coefficients of the spillover variables were similar (positive family-to-work spillover) or larger (negative work-to-family spillover) compared to those of other predictors of SWB. The variance accounted for by the control variables was substantial ($R^2 = .23$) and the incremental variance accounted for by work–family spillover was .01. In sum, Hypotheses 1 and 2 were partially supported; whereas positive family-to-work spillover and negative work-to-family spillover predicted future life satisfaction, positive work-to-family spillover and negative family-to-work spillover did not predict future life satisfaction.

Hypothesis 3 predicted that for a given direction, negative work–family spillover has a stronger longitudinal relationship with life satisfaction than does positive work–family spillover. As discussed above, only negative spillover was a significant predictor of future life satisfaction in the work-to-family direction [95 % CI (–.32, –.12)] (see Table 2) and only positive spillover was a significant predictor of future life satisfaction in the family-to-work direction [95 % CI (.03, .19)]. However, when we compared the 95 % confidence intervals between positive and negative spillover for each direction, we found that they overlapped. Thus, Hypothesis 3 was not supported.

Hypotheses 4 and 5 proposed that job satisfaction and marital satisfaction mediate the relationship between work–family spillover and life satisfaction. Building on the results for Hypotheses 1 and 2, we included spillover variables that had a significant relationship with life satisfaction (*viz.* positive family-to-work spillover and negative work-to-family spillover) in the mediation model. As shown in Fig. 2, the model fits the data well [$\chi^2 = 19.716$, $df = 5$, CFI = .99, TLI = .90, RMSEA = .048, 95 % CI (.027, .071), SRMR = .009]. In support of Hypothesis 4, job satisfaction mediated the relationship between positive family-to-work spillover and life satisfaction [unstandardized $b = .040$, 95 % CI (.014, .066)] and the relationship between negative work-to-family spillover and life satisfaction (unstandardized $b = -.058$, 95 % CI (–.090, –.027)]. Hypothesis 5 was partially supported in that

¹ We thank an anonymous reviewer for this suggestion.

Table 1 Mean, standard deviations, and zero-order correlations among study variables

| Variable | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------|-------|------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| 1. Time 2 LS | 7.84 | 1.50 | | | | | | | | | | |
| 2. Time 1 LS | 7.79 | 1.45 | .46** | | | | | | | | | |
| 3. Time 2 JS | 7.41 | 2.12 | .46** | .26** | | | | | | | | |
| 4. Time 1 JS | 7.38 | 1.94 | .25** | .41** | .24** | | | | | | | |
| 5. Time 2 MS | 8.11 | 1.92 | .51** | .30** | .18** | .12** | | | | | | |
| 6. Time 1 MS | 8.11 | 1.89 | .28** | .56** | .10** | .19** | .48** | | | | | |
| 7. Time 2 FWNS | 2.54 | 0.69 | -.27** | -.19** | -.36** | -.16** | -.20** | -.11** | | | | |
| 8. Time 2 FWPS | 2.90 | 0.72 | .12** | .09** | .21** | .12** | .03 | .05* | .09** | | | |
| 9. Time 2 WFNS | 2.04 | 0.61 | -.29** | -.17** | -.19** | -.12** | -.30** | -.16** | .53** | .13** | | |
| 10. Time 2 WFPS | 3.38 | 0.77 | .26** | .17** | .09** | .08** | .34** | .24** | .12** | .44** | .05* | |
| 11. Time 1 FWNS | 2.63 | 0.69 | -.21** | -.28** | -.16** | -.34** | -.16** | -.17** | .43** | .03 | .28** | -.01 |
| 12. Time 1 FWPS | 2.86 | 0.71 | .13** | .14** | .12** | .25** | .06* | .05* | .05* | .46** | .06** | .25** |
| 13. Time 1 WFNS | 2.08 | 0.61 | -.23** | -.28** | -.16** | -.19** | -.23** | -.29** | .32** | .07** | .45** | -.02 |
| 14. Time 1 WFPS | 3.33 | 0.75 | .20** | .32** | .08** | .13** | .22** | .41** | .00 | .24** | -.01 | .44** |
| 15. Physical health | 3.70 | 0.88 | .22** | .24** | .18** | .15** | .10** | .10** | -.12** | .08** | -.12** | .05* |
| 16. Personal income | 22.41 | 6.83 | .06** | .06** | .04 | .04 | .00 | .01 | .05* | .04 | .00 | .02 |
| 17. Agreeableness | 3.46 | 0.50 | .15** | .18** | .09** | .13** | .10** | .15** | -.04 | .11** | -.06** | .15** |
| 18. Extraversion | 3.19 | 0.55 | .21** | .28** | .13** | .16** | .13** | .15** | -.08** | .16** | -.06** | .19** |
| 19. Neuroticism | 2.23 | 0.66 | -.25** | -.35** | -.19** | -.24** | -.14** | -.21** | .28** | -.06* | .25** | -.06** |
| 20. Conscientiousness | 3.46 | 0.42 | .20** | .25** | .15** | .13** | .08** | .12** | -.07** | .12** | -.11** | .12** |
| 21. Openness | 3.01 | 0.51 | .13** | .18** | .07** | .12** | .07** | .10** | -.03 | .18** | -.03 | .14** |
| 22. Gender | 1.56 | 0.65 | .01 | .00 | .05* | .03 | -.09** | -.10** | -.01 | .03 | .05* | -.02 |

| Variable | Mean | SD | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|-----------------------|-------|------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|--------|
| 1. Time 2 LS | 7.84 | 1.50 | | | | | | | | | | | |
| 2. Time 1 LS | 7.79 | 1.45 | | | | | | | | | | | |
| 3. Time 2 JS | 7.41 | 2.12 | | | | | | | | | | | |
| 4. Time 1 JS | 7.38 | 1.94 | | | | | | | | | | | |
| 5. Time 2 MS | 8.11 | 1.92 | | | | | | | | | | | |
| 6. Time 1 MS | 8.11 | 1.89 | | | | | | | | | | | |
| 7. Time 2 FWNS | 2.54 | 0.69 | | | | | | | | | | | |
| 8. Time 2 FWPS | 2.90 | 0.72 | | | | | | | | | | | |
| 9. Time 2 WFNS | 2.04 | 0.61 | | | | | | | | | | | |
| 10. Time 2 WFPS | 3.38 | 0.77 | | | | | | | | | | | |
| 11. Time 1 FWNS | 2.63 | 0.69 | | | | | | | | | | | |
| 12. Time 1 FWPS | 2.86 | 0.71 | .01 | | | | | | | | | | |
| 13. Time 1 WFNS | 2.08 | 0.61 | .46** | .12** | | | | | | | | | |
| 14. Time 1 WFPS | 3.33 | 0.75 | .05* | .37** | -.03 | | | | | | | | |
| 15. Physical health | 3.70 | 0.88 | -.11** | .08** | -.09** | .10** | | | | | | | |
| 16. Personal income | 22.41 | 6.83 | .18** | .07** | .04* | .05* | .11** | | | | | | |
| 17. Agreeableness | 3.46 | 0.50 | -.10** | .13** | -.10** | .18** | .05* | -.17** | | | | | |
| 18. Extraversion | 3.19 | 0.55 | -.17** | .20** | -.13** | .23** | .15** | -.03 | .51** | | | | |
| 19. Neuroticism | 2.23 | 0.66 | .33** | -.13** | .30** | -.14** | -.20** | -.09** | -.05* | -.15** | | | |
| 20. Conscientiousness | 3.46 | 0.42 | -.10** | .13** | -.17** | .13** | .21** | .08** | .26** | .24** | -.19** | | |
| 21. Openness | 3.01 | 0.51 | -.04* | .22** | -.07** | .17** | .13** | .12** | .33** | .48** | -.18** | .25** | |
| 22. Gender | 1.56 | 0.65 | -.01 | .06** | .04 | -.02 | -.03 | -.38** | .27** | .07** | .09** | .15** | -.06** |

LS life satisfaction, JS job satisfaction, MS marital satisfaction, FWNS negative family-to-work spillover, FWPS positive family-to-work spillover, WFNS negative work-to-family spillover, WFPS positive work-to-family spillover

* $p < .05$; ** $p < .01$

Table 2 Predicting future life satisfaction: Regression results

| DV: Time 2 LS | Model 1 | | | | Model 2 | | | |
|-------------------|----------|-----|---------|----------|----------|-----|---------|----------|
| | <i>B</i> | SE | β | <i>p</i> | <i>B</i> | SE | β | <i>p</i> |
| Intercept | 4.80 | .24 | | .00 | 3.68 | .38 | | .00 |
| Time 1 LS | .40 | .02 | .38 | .00 | .35 | .02 | .33 | .00 |
| Time 1 FWNS | −.11 | .05 | −.05 | .02 | −.09 | .05 | −.04 | .07 |
| Time 1 FWPS | .16 | .04 | .07 | .00 | .11 | .04 | .05 | .01 |
| Time 1 WFNS | −.26 | .05 | −.11 | .00 | −.22 | .05 | −.09 | .00 |
| Time 1 WFPS | .10 | .04 | .05 | .02 | .07 | .04 | .04 | .08 |
| Physical health | | | | | .14 | .03 | .08 | .00 |
| Personal income | | | | | .01 | .01 | .05 | .03 |
| Agreeableness | | | | | .12 | .07 | .04 | .08 |
| Extraversion | | | | | .14 | .06 | .05 | .03 |
| Neuroticism | | | | | −.12 | .05 | −.05 | .01 |
| Conscientiousness | | | | | .10 | .07 | .03 | .15 |
| Openness | | | | | −.07 | .06 | −.02 | .27 |
| Gender | | | | | .06 | .06 | .02 | .31 |

FWNS negative family-to-work spillover, *FWPS* positive family-to-work spillover, *WFNS* negative work-to-family spillover, *WFPS* positive work-to-family spillover

marital satisfaction mediated the link between negative work-to-family spillover and life satisfaction [unstandardized $b = -.064$, 95 % CI (−.126, −.003)] but not the link between positive family-to-work spillover and life satisfaction (unstandardized $b = .028$, 95 % CI (−.022, .077)]. The two spillover constructs accounted for 5% of the variance in job satisfaction and marital satisfaction each, which in turn predicted life satisfaction, accounting for 39 % of the variance (see Fig. 2). The estimated total mediation R^2 of the two domain satisfactions between the spillover variables and life satisfaction was .07 (Fairchild et al. 2009; this procedure does not account for control variables). Importantly, these mediation effects of domain satisfaction occur over and above consistency effects of spillover over time because we included Time 2 spillover constructs.

Additional Analyses

We additionally tested a partial mediation model in which direct paths from the two spillover variables at Time 1 to life satisfaction at Time 2 are allowed ($\chi^2 = 18.622$, $df = 3$, CFI = .99, TLI = .82, RMSEA = .064, 95 % CI (.038, .093), SRMR = .009]. This model did not fit the data as well as the initial model (i.e., full mediation), and the direct paths were not significant ($ps > .05$). Moreover, there was no significant difference between the full mediation model and the partial mediation model ($\Delta\chi^2 = 1.094$, $df = 2$, $p > .05$). As such, the full mediation model was preferred following the principle of parsimony (Mulaik 1998). Further, we specified a model where there was no

mediation of work–family spillover via domain satisfactions (i.e., the four paths from the work–family spillover variables to domain satisfactions were not specified). The model did not fit the data well (and as compared to other models) ($\chi^2 = 48.423$, $df = 9$, CFI = .98, TLI = .85, RMSEA = .058, 95 % CI (.043, .075), SRMR = .013], and the Chi-square test suggested that the unmediated model fits significantly worse than the full mediation model ($\Delta\chi^2 = 28.71$, $df = 4$, $p < .05$). Altogether, this demonstrates that the effects of work–family spillover on future life satisfaction were fully mediated by job satisfaction and marital satisfaction.

Although our focus was on whether work–family spillover predicts domain satisfactions and in turn future life satisfaction, we conducted exploratory analyses to test the cross-lagged effects.² Specifically, we tested (a) whether Time 1 work–family spillover predicts Time 2 life satisfaction, controlling for Time 1 life satisfaction and (b) whether Time 1 life satisfaction predicts Time 2 work–family spillover, controlling for Time 1 work–family spillover. We fit a time-lagged path model to examine both effects simultaneously, with Time 1 personality, health, income, and gender as control variables. Results suggest that Time 1 work–family spillover predicted Time 2 life satisfaction but not the other way around. Whereas both Time 1 positive family-to-work spillover ($\beta = .07$, $p < .01$) and Time 1 negative work-to-family spillover ($\beta = -.07$, $p < .01$) predicted Time 2 life satisfaction, Time 1 life satisfaction predicted neither Time 2 positive

² We thank an anonymous reviewer for this suggestion.

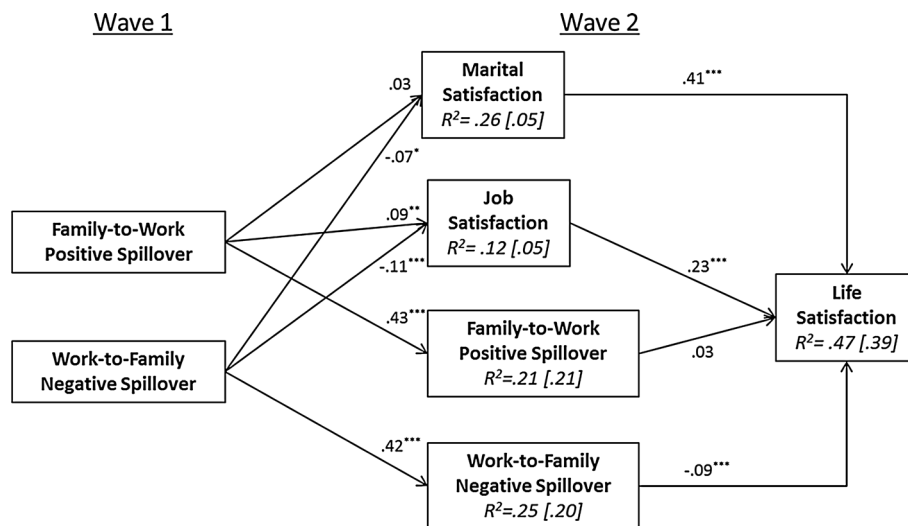


Fig. 2 Domain satisfaction mediates the relationship between work–family spillover and life satisfaction. All path estimates are based on standardized coefficients; for clarity of presentation, paths and coefficients from control variables to all Time 2 variables (marital satisfaction, job satisfaction, positive family-to-work spillover,

negative work-to-family spillover) are not presented. In addition, the correlations between mediating variables are not presented. R^2 values for the dependent variables are presented; values in brackets indicate R^2 without control variables. * $p < .05$; ** $p < .01$; *** $p < .001$

family-to-work ($\beta = -.01, ns$) nor Time 2 negative work-to-family spillover ($\beta = -.02, ns$). This is suggestive of a causal direction from work–family spillover to life satisfaction rather than the other way around.

Discussion

Despite greater recognition that public and workplace policies are needed to facilitate work–family integration, scarce evidence exists on whether and how the work–family spillover relates to future SWB. Guided by COR (Hobfoll 1989, 2002, 2011) and bottom-up theories of SWB (Diener 1984), we examined (a) the prospective relationship between work–family spillover and SWB, (b) the relative impact of positive and negative spillover on SWB, and (c) the mediating role of domain satisfaction in the spillover–SWB link, using a fully crossed longitudinal dataset from a large representative sample of the United States. In doing so, we contribute to the growing interest in the longitudinal relationship between work–family interface and SWB (e.g., Matthews et al. 2014; Nohe et al. 2015) in the work–family literature.

Main Findings

We found that positive family-to-work spillover and negative work-to-family spillover predict future life satisfaction. This provides support for the fundamental tenets of COR that obtaining and utilizing resources lead to higher SWB, whereas experiences of resource shortage and

potential loss of resources result in negative consequences for SWB (Hobfoll 1989, 2002). Echoing previous research that underscores the importance of work–family interface to SWB (Sirgy and Wu 2009), work–family spillover explained small but incremental variance over and above multiple control variables after a period of nine years. Importantly, the two spillover variables had a comparable impact on SWB to other known predictors of SWB.

Contrary to the primacy of resource loss principle in COR (Hobfoll 2011) and negativity bias (Baumeister et al. 2001), the impacts of negative and positive spillover on SWB were similar in their magnitudes. Based on the pattern that only negative spillover was a significant predictor of SWB in the work-to-family direction while only positive spillover predicted SWB in the family-to-work direction, we provide a potential explanation for the unexpected results. Studies on the prevalence of work–family spillover indicated that negative spillover is more prevalent in the work-to-family direction, whereas positive spillover is more frequent in the family-to-work direction (Bellavia and Frone 2005; Greenhaus and Powell 2006). Research on negativity bias (Baumeister et al. 2001) and SWB (Diener et al. 1991) emphasized that the frequency of an event should be considered when evaluating its psychological impact. Specifically, Baumeister et al. (2001) noted that although the psychological effects of negative events outweigh those of positive ones *when equal measures of good and bad are present*, impacts of frequent good events may prevail over impacts of infrequent bad events. Thus, it could be that positive spillover might have had a stronger impact on SWB than we expected because it was more

frequently experienced, especially in the family-to-work direction. Given that the frequency of work–family spillover was not measured in the current study, future study is necessary to test this possibility.

Next, consistent with COR (Hobfoll 1989, 2011) and bottom-up theories of SWB (Diener 1984), we found that domain satisfaction is a pathway through which work–family spillover exerts long-term effects on life satisfaction. That is, work–family spillover exerts long-lasting effects on SWB via altering the way individuals experience their job and marital relationship, which serves as an important source for the overall appraisal of their life.

Finally, our cross-lagged analyses showed that work–family spillover predicts future life satisfaction, whereas life satisfaction does not predict future work–family spillover. This supports the common assumption that work–family spillover matters for SWB in the long run. It is important to note that the results are different from the recent meta-analysis of panel studies that reported reciprocal relationship between WFC and strain (Nohe et al. 2015). As discussed earlier, our study adopted a longer time lag than the studies reviewed in Nohe et al. Although we suspected that SWB might have a substantially weaker prediction of work–family spillover after certain periods of time, we were unable to test the role of time in the spillover–SWB relationship due to lack of data collected in between the two waves included in this study. Another distinct feature of our study is that we used life satisfaction, an overall assessment of one’s life, as a measure for SWB, whereas strain, a health-related measure, was used in the studies included in Nohe et al. Life satisfaction is based on multiple sources of information, including one’s health and domain-specific satisfaction (Diener et al. 1999); taken together, work–family spillover appears to have a long-lasting impact on overall life satisfaction by altering domain satisfaction.

Theoretical and Practical Implications

Our study makes several key contributions to the literature. First, by demonstrating the significant relationship between work–family spillover and life satisfaction at a nine-year follow-up, our study indicates that COR (Hobfoll 2002) is a useful theoretical framework to explain the impact of work–family spillover on SWB in the long run. In doing so, this study extends prior research that tested propositions of COR with a relatively short-term interval (e.g., Grandey and Cropanzano 1999; Matthews et al. 2014). This significant longitudinal relationship is consistent with previous research on temporal stability of work–family experiences (e.g., Innstrand et al. 2008; Rantanen et al. 2008) and the meta-analytic evidence that the impact of WFC on strain did not differ as a function of the time

interval, which ranged from 1 month to 6 years (Nohe et al. 2015). In sum, our study suggests that the spillover–SWB relationship with a longer interval is similar to the one with shorter intervals.

To the best of our knowledge, this study is the first to test the COR’s primacy of resource loss principle (Hobfoll 2011) in the work–family context. Because individuals are likely to experience positive and negative spillover concurrently (Greenhaus and Powell 2006), investigating their relative impact on life satisfaction provides a new insight into the relationship between the work–family interface and SWB. The results suggest that the frequency of spillover might be a critical factor when studying the relative impact of work–family spillover on life satisfaction. We hope the current finding that positive versus negative work–family spillover has a similar impact on future SWB would propel more research on the spillover–SWB relationship considering the directions, valence, and frequency of spillover.

Next, our study presents further evidence regarding the causality of the spillover–SWB relationship, which has been called for by multiple scholars (Casper et al. 2007; Nohe et al. 2015). Regarding the directionality, we demonstrated that work–family spillover affects life satisfaction in the long run, but not the other way around, by considering the stability effect of work–family spillover and testing the reversal between spillover and SWB. With regard to the underlying mechanisms of the spillover–SWB link, we showed that job and marital satisfaction are two distinct mediating pathways by which work–family spillover influences SWB, a finding in line with the bottom-up theories of SWB (Diener 1984).

Our findings have implications for the SWB literature as well. On the one hand, the enduring effect of negative work-to-family spillover is striking given that it is seemingly minor compared to other life events that previous SWB research has shown to yield long-term changes in SWB (e.g., divorce, unemployment; Lucas 2005; Lucas et al. 2004). On the other hand, the significant longitudinal relationship of positive family-to-work spillover with life satisfaction is encouraging in that previous research suggested that adaptation often occurs with positive events (e.g., marriage; Lucas and Clark 2006). Scholars have noted that intense positive life events might not necessarily increase long-term happiness because they rarely happen and bring unattractive side effects such as reducing positivity of other good experiences (Diener et al. 1991). Taken together, our study highlights that work–family spillover should be considered as an important determinant of SWB because its effects on life satisfaction are comparable to other life events and its frequency is presumably higher than major life events.

The current study provides several practical implications. First of all, our study supports the ongoing political discourse

that recognizes the importance of work–family balance (European Commission 2006, 2008, 2011; The White House 2010, 2014). At the governmental level, public policies to aid employees to better manage the work and family roles (e.g., paid family leaves, tax credits for individuals, tax reductions for family-friendly companies; Robila 2014) would increase SWB of individuals in the society in the long run. At the organizational level, adopting flexible work arrangements (Allen et al. 2013) and family-supportive supervisor behavior training (Kossek et al. 2011) is encouraged as they have been shown to reduce negative work–family spillover. Other organizational strategies that are known to facilitate positive work–family spillover (e.g., granting greater decision latitude, increasing task variety and complexity; Grzywacz and Butler 2005) could also be utilized.

With the knowledge on domain satisfaction as mediator of the spillover–SWB link, we suggest that targeting efforts towards the proximal determinants of SWB might be effective to improve SWB in the long run, particularly for the situations where directly targeting work–family spillover is more difficult. For instance, evidence-based practices to improve job satisfaction (e.g., job crafting; Tims et al. 2013) and marital satisfaction (e.g., problem-solving interactions and affect expression; Johnson et al. 2005) could be recommended to improve individuals' life satisfaction.

Limitation and Future Research

Despite its contributions, our study has several limitations. First, we assessed several study variables using a single indicator although previous research has shown that a single indicator can be reliable and valid (Diener et al. 2013; Schimmack and Oishi 2005; Wanous et al. 1997). Second, the reliability coefficient for conscientiousness, one of the control variables, was lower than the conventional cut-off point of .70 (Nunnally 1973). As we utilized an archival dataset, our ability to choose construct indicators was limited. We believe the merit to provide more generalizable findings based on a nationally representative sample outweighs these limitations. Lastly, we used self-reported survey data only, which raises concerns about common method variance. Longitudinal nature of our data, however, might alleviate these concerns because temporal separation between the measures is a recommended technique that reduces the common method bias (Podsakoff et al. 2012).

Findings of the present study show several fruitful avenues for future research. First, utilizing data collected at multiple time points with various intervals would be informative to understand the fluctuation of SWB and the role of time in the spillover–SWB relationship. The data in the current study were collected from two time points and do not necessarily provide detailed information as to how SWB changes over a long period of time. Next, although we found

support for the full mediation model where domain satisfactions mediated the relation between work–family spillover and life satisfaction, full mediation is often unlikely in the real world (Baron and Kenny 1986). It is important to note that full mediation occurred in this context because we used lagged work–family spillover variables (Time 1 and Time 2); that is, part of the Time 1 spillover effects was “mediated” by the consistency effects of work–family spillover (see Fig. 2). This model does not indicate that work–family spillover is only mediated via domain satisfaction (apart from consistency effects). This is consistent with the SWB literature that acknowledges multiple factors contributing to SWB (Diener et al. 1999). As such, we call for future research to identify other mechanisms that explain the link between work–family spillover and life satisfaction. For instance, significant life events (e.g., job change, divorce) might also mediate the spillover–SWB relationship. Previous research suggests that negative work–family spillover relates to turnover intention and family-related stress (Amstad et al. 2011); in an attempt to remedy the situation, individuals might change their job or divorce, which in turn affects SWB. Finally, future research should also explore moderating variables that qualify the relationships found in this study. Personal importance of a given role (i.e., role salience; Super and Nevill 1986), for example, might determine the degree to which domain satisfaction contributes to one's overall evaluation of life; lower job satisfaction might weigh more in evaluating one's overall life among employees who prioritize their work role compared to those who value their family role.

Conclusion

By demonstrating a long-term relationship between work–family spillover and life satisfaction, the present study contributes to the work–family literature and the SWB literature. The results suggest that negative work-to-family spillover and positive family-to-work spillover are robust determinants of future SWB and that job satisfaction and marital satisfaction are two routes by which work–family spillover alters life satisfaction. Given an increasing number of families facing work–family challenges, support for individuals to successfully manage work and family lives can be an important path to happiness.

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