

Role resources and work–family enrichment: The role of work engagement ☆

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ABSTRACT

This article proposes a theoretical model of work–family enrichment and tests the mediating role of work engagement. The inclusion of work engagement extends prior research on work–family interface, and allows for examination of the effects of role resources (job resources, family support) on work–family enrichment. A two-wave survey was conducted among a matched sample of 786 employees in China. The model was tested with structural equation modeling techniques. The results showed that work engagement was the most proximal predictor of work–family enrichment. Work engagement fully mediated the relationship between family-friendly organizational policies and work–family enrichment, and also between job autonomy and family-work enrichment. Further, work engagement partially mediated the relationships between two job resources (supervisor support, job autonomy) and work–family enrichment, and also between family support and family-work enrichment. No difference was found in gender and marital status in the proposed model. Implications for future research and practices are discussed.

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Introduction

The majority of work–family research has focused on negative spillover between demands and outcomes and between the work and family domains (e.g., work–family conflict; see review by Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005). The theory that guided this research was in most cases role stress theory (Greenhaus & Beutell, 1985) or the role scarcity hypothesis (Edwards & Rothbard, 2000). However, according to spillover theory, work-related activities and satisfaction also affect nonwork performance, and vice versa. Recently, in line with the positive psychology movement (Seligman & Csikszentmihalyi, 2000), work–family interaction research has also included concepts of *positive spillover* (Bakker & Schaufeli, 2008; Grzywacz & Marks, 2000). This emerging focus supplements the dominant conflict perspective by identifying new ways of cultivating human resource strength.

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Greenhaus and Powell (2006) suggested that work–family enrichment best captured the mechanism of the positive work–family interface and conceptualized work–family enrichment as “the extent to which experiences in one role improve the quality of life in the other role” (p. 73). Carlson, Kacmar, Wayne, and Grzywacz (2006) described the bidirectional and multidimensional concept of work-to-family enrichment (WFE) as how family roles benefit from work roles through developmental resources, positive affect, and psychosocial capital derived from involvement in work. Similarly, family-to-work enrichment (FWE) is defined as how work roles benefit from family roles through developmental resources, positive affect, and gains in efficiency derived from involvement in family. As the concept and measure of work–family enrichment has been specified and validated, the identification of factors that enable this positive side of work–family interface has become possible. Published theory testing research has demonstrated that the enrichment and conflict components of work–family interface are distinct, and the processes underlying work–family conflict cannot simply be generalized to work–family enrichment (Aryee, Srinivas, & Tan, 2005; Bakker & Geurts, 2004; Lu, Siu, Spector, & Shi, 2009; Voydanoff, 2004). To guide future research in this area, Greenhaus and Powell (2006) proposed a theoretical model describing two paths to work–family enrichment: an *instrumental path* and an *affective path*. However, the research propositions within Greenhaus and Powell’s model have yet to be empirically tested. Related research either examined the outcomes and moderators of work–family enrichment (Gordon, Whelan-Berry, & Hamilton, 2007; Innstrand, Langballe, & Falkum, 2010; Witt & Carlson, 2006) or adopted Greenhaus and Powell (2006) in support of a particular hypothesis (Butler, 2007; Gordon et al., 2007), and research focusing on identifying factors that enable work–family enrichment has rarely been undertaken.

While work–family enrichment is becoming a topic of popular national concern, Mainland China is under-represented by its contributions to this pool of academic knowledge. As China is transforming into a market economy-oriented society, social modernization is also experiencing rapid change in both work and life styles, resulting in more interference between the work and family domains (Lu, Shi, & Lawler, 2002; Siu, Spector, Cooper, & Lu, 2005). There have been a number of work–family studies conducted in China, and between Chinese and Western societies, but results have been inconsistent (Yang, Chen, Choi, & Zou, 2000; Spector et al., 2004; Spector et al., 2007). Cultural characteristics as well as the macroenvironment in Chinese society may elicit differential opportunities for individuals to achieve work–family facilitation. For instance, the prevailing adoption of the one-child policy in China makes parenting a once-in-a-lifetime experience for most couples. Embedded in the less developed economy and collectivistic culture, people tend to have closer ties to extended family members who provide both material and social support for family responsibilities (Ling & Powell, 2001; Spector et al., 2007). It is therefore worthwhile to test Western theories on work–family enrichment within the Chinese context.

Therefore, the purposes of the study are first, to specifically test the processes leading to work–family enrichment as proposed by Greenhaus and Powell (2006); second, in light of these processes, to examine the relevant antecedents of work–family enrichment; third, to extend Western theories of work–family enrichment to samples in Mainland China.

Theory and hypotheses

Work–family enrichment and work engagement

Greenhaus and Powell (2006) specified an instrumental path and an affective path by which work and family resources promote work–family enrichment. In this dual-path model, five types of resources generated from participation in a role were identified: skills and perspectives, psychological and physical resources, social capital resources, flexibility, and material resources. The instrumental path indicates that resources accumulated in role A (work or family) can directly promote high performance in role B (family or work). The affective path suggests that resources derived from role A produce positive affect in role A, which in turn promote high performance in role B. In addition, through both the instrumental and affective paths, the resources derived in role A ultimately promote positive affect in role B, due to the effect of improved performance in role B. According to these propositions, a role state that is characterized by high performance and positive affect should be the most proximal factor in predicting work–family enrichment.

Conceptually, work engagement could represent a critical factor in testing Greenhaus and Powell’s (2006) theoretical propositions. Work engagement is defined as a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption (Bakker, Schaufeli, Leiter, & Taris, 2008; Schaufeli, Salanova, Gonzalez-Romá, & Bakker, 2002). Vigor refers to high levels of energy while working. Dedication refers to being strongly involved in one’s work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Finally, absorption indicates that one is fully concentrated and happily engrossed in one’s work, whereby time passes quickly. From the affect perspective, employees with high work engagement should coexist with positive affect and cognition, as they feel vigorous and work on meaningful tasks. Furthermore, when people are fully concentrated, they tend to feel time passes quickly, which is a typical happy experience (Seligman, Rashid, & Parks, 2006). From a performance perspective, employees with high work engagement feel a strong identity with their work, and they perceive their work as meaningful, inspirational, and challenging, thus they tend to apply knowledge and utilize skills and resources to a greater extent at work (Bakker & Demerouti, 2007). Research has indeed shown that work engagement is positively related to job performance (Demerouti & Cropanzano, 2010). Hence, conceptually, work engagement resembles the states of high performance and positive affect.

Theoretical reasoning also points to the positive relationships between work engagement and the two-path process underlying work–family enrichment. According to Greenhaus and Powell’s (2006) first instrumental path, knowledge, skills, and various resources in role A will directly improve performance in role B. We argue that the knowledge, skills, and various resources at work are transferred and utilized in the family domain through the experience of high work engagement. Highly engaged employees are characterized by strong identity with the work and recognition of meaning and significance in the work. Highly engaged employees

also welcome challenges and believe that they will continuously learn and grow from work (Bakker & Leiter, 2010). Because engaged workers believe what they do at work is meaningful, they can better cognitively crystallize the knowledge, skills, and various resources, which in turn are more readily transferred to their family domain. Similarly, according to Greenhaus and Powell's (2006) affect path (knowledge, skills, and various resources in role A will lead to positive affect in both roles A and B), highly engaged employees are characterized by vigor, energy, and a happy mood at work. This mood may directly spill over to the family domain and facilitate family role performance, which in turn would enhance the positive mood in the family domain. Therefore, we anticipate,

Hypothesis 1. Work engagement will be positively related to WFE.

Under the influence of work–family conflict, there has been an implicit assumption of domain specificity dynamics, which suggests that job resources primarily lead to WFE, while family resources primarily lead to FWE. However, empirical findings suggest that certain predictors that are significantly related to one type of enrichment are also significantly related to the other type of enrichment. For example, Lu et al. (2009) found that both spouse support and support from family-friendly coworkers had positive effects on both FWE and WFE. If Greenhaus and Powell's (2006) propositions are true, the performance- and affect-enriching process between work and family roles may in fact be reciprocal. That is, the knowledge, skills, and various resources derived from either role set will yield both WFE and FWE. Thus, we suggest,

Hypothesis 2. Work engagement will be positively related to FWE.

Role resources (job resources, family support) and work engagement

If work engagement was a more proximal factor in predicting work–family enrichment, factors that enable work–family enrichment should also initially enable work engagement. According to the job demands–resources (JD-R) model (Bakker & Demerouti, 2007), job resources are positively associated with work engagement. Such resources are found to be those physical, social, or organizational aspects at the workplace that may: (a) reduce job demands and the associated physiological and psychological costs; (b) be functional in achieving work goals; or (c) stimulate personal growth, learning, and development (Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004).

An initial job resource relevant to the work–family literature and work engagement could be family-friendly organizational policies, such as flexible work scheduling childcare assistance, flexible work arrangements, and elder care assistance (Brough, O'Driscoll & Kalliath, 2005; Families & Work Institute, 1998; Lu et al., 2002, 2009; Siu & Phillips, 2007). These family-friendly organizational initiatives per se may not directly facilitate work–family enrichment, yet they do allow employees increased control over their schedule or the ways in which the job is performed. This psychological state would be beneficial to the employees in terms of preventing work and family responsibilities from interfering with each other. Even for those workers who cannot utilize some family-friendly policies, the existence of relevant policies should communicate the message of a caring organization.

Job resources also include supervisor support and colleague support which are each also positively associated with work engagement (Halbesleben, 2010; Schaufeli & Bakker, 2004). These two types of social support may promote work engagement both intrinsically and extrinsically. Supervisor and colleague support may satisfy employees' needs to belong and enable employees to identify with their work, which in turn foster the willingness to dedicate efforts and abilities to the work task, thus facilitating successful work performance. For instance, Bakker et al. (2008) noted that both supportive colleagues and proper feedback from one's superior increased the likelihood of employees successfully achieving their work goals.

Job autonomy is another job resource described by the JD-R model. Job autonomy refers to the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedure to be used in carrying it out (Hackman & Oldham, 1975). The link between job autonomy and the intrinsic motivational potential is recognized by Job Characteristics Theory (JCT; Hackman & Oldham, 1980), which argued that every job has a specific motivational potential that depends on the presence of core job characteristics. Furthermore, according to self-determination theory (Deci & Ryan, 1985), job autonomy is an essential human need in work, thus work contexts that support psychological autonomy also enhance vigor (Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008) and increase intrinsic motivation (Ryan & Frederick, 1997).

In addition to job resources, family support should also be considered as a role resource which could enhance work engagement, in accordance with Greenhaus and Powell's (2006) dual pathways model. Family support may play an extrinsic motivational role by providing instrumental advice and affective resources to help employees in achieving their work goals (Grzywacz & Marks, 2000). In addition, family support may also play a resource role by providing love and expectation to motivate employees, specifically those from collectivistic societies, to work harder at their jobs (Grzywacz & Marks, 2000; Yeh, Arora, & Wu, 2006). Taken together, we formulated the following hypothesis:

Hypothesis 3. Role resources (family-friendly organizational policies, supervisor support, colleague support, job autonomy, and family support) will be positively related to work engagement.

Work engagement as a mediator between role resources and work–family enrichment

There have been some propositions and empirical research about factors enabling the positive interaction between work–family roles, and many of them appear to also corroborate work engagement research findings. Grzywacz and Marks (2000), for

example, identified factors that facilitated role development such as decision latitude and family support which were associated with positive spillover between work and family. Based on this observation, Frone (2003) anticipated that social support would be the most important antecedent of work–family enrichment. In examining the processes underlying work–family enrichment, O'Driscoll, Brough, and Kalliath (2006) argued that a central construct leading to work–family enrichment is transferable work-related resources, and work–family enrichment is more likely to occur when resources in one domain are exploitable and can be utilized in the other domain. Lu et al. (2009) tested these propositions, and their findings generally supported the idea that social support is associated with enrichment. Nonetheless, Lu et al.'s investigation emphasized that, regarding social support, it is not “what” but “who” that matters, as social support from spouses, supervisors, and coworkers better predicts both WFE and FWE than does support from paid or elderly domestic helpers. In line with Greenhaus and Powell's (2006) theoretical propositions, we therefore argue that the mere presence of work and family resources would not necessarily lead to work–family enrichment, yet these resources can be utilized in enhancing work engagement and, in turn, promoting work–family enrichment. It is predicted that, after including work engagement into this model, the relationships between role resources and WFE will become weaker or disappear.

Hypothesis 4. Work engagement will mediate the relationships between job resources (family-friendly organizational policies, supervisor support, colleague support, and job autonomy) on the one hand, and WFE on the other hand.

Family support is theoretically associated with FWE. This is specifically true among employees in collectivistic societies. For instance, as mentioned earlier, family support may play a resource role by providing social support and love in Asian groups (Yeh et al., 2006). Further, some resources at work were found to have cross-domain impacts on FWE, such as colleague support (Lu et al., 2009), and job autonomy (Grzywacz & Marks, 2000). Therefore, it is expected that, after including work engagement in the model, the relationships between role resources and FWE will become weaker or disappear.

Hypothesis 5. Work engagement will mediate the relationships between colleague support, job autonomy, and family support on the one hand and FWE on the other.

A general theoretical model representing all hypotheses is depicted in Fig. 1.

Method

Participants

We adopted a two-wave longitudinal design for testing the hypotheses. The respondents were drawn from hospitals in Guangzhou and an eyeglasses factory in Dongguan. The surveys were administered twice to the respondents with a 6-month time interval. The span of 6 months was to provide ample separation between our measures while not spacing surveys so far apart as to unnecessarily increase participant attrition. On behalf of the research team, the human resource department sent invitation letters to all employees requesting them to participate in the survey twice. Employees were assured of the confidentiality of their response and were informed in the invitation letter that their participation was voluntary. In addition, employees were told that the objective of the survey was to evaluate the effectiveness of work–life policies in terms of business outcomes as well as measuring individual health outcomes. Completed questionnaires were returned to a designated box in the human resources department.

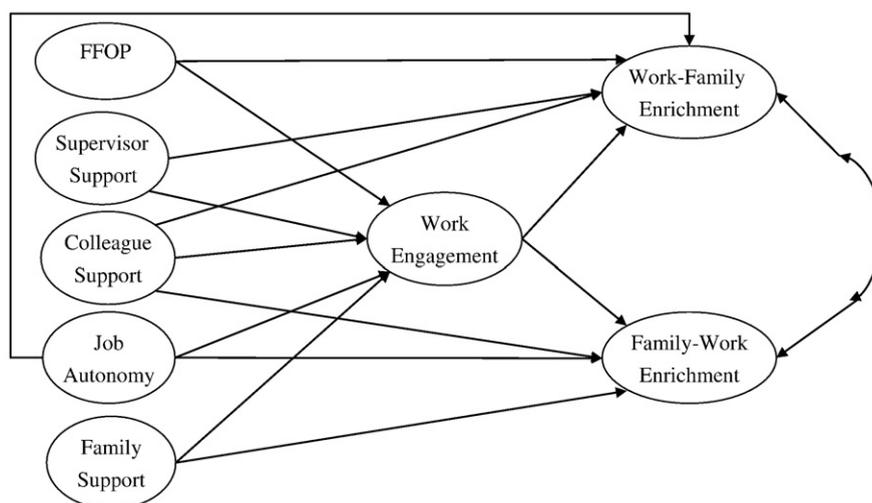


Fig. 1. A general theoretical model. FFOP = family-friendly organizational policies.

The response rate was 79% out of 4600 workers in the 1st wave of data collection, and 89% out of 4026 workers in the 2nd wave. The matching code was comprised of three letters of respondents' mothers' maiden name, two digits of date of birth, and two digits of month of birth. We first dropped cases with duplicated code within each wave and then matched the data of two waves, resulted in a matched sample of 786 full-time workers (150 men, 623 women, and 13 with missing values). As of Time 2, the respondents ranged in age from 18 to 51 years ($M=25$, $SD=6.0$). About 22% of the respondents were from hospitals in Guangzhou and 78% were from the factory in Dongguan. Over half (59.5%; $n=468$) of the respondents were single or never married, 297 (37.8%) were married or cohabitating. Of all respondents, 197 (25.1%) had one child, 27 (3.4%) had two children, and only 1 (0.1%) had three children. Besides, 37 (4.7%) respondents had one parent dependent, 342 (43.5%) had two parent dependents, 37 (4.7%) had three, and 82 (10.4%) had four parent dependents. The respondents spent an average of 13.3 hours in a typical week looking after dependents, and an average of 9.7 hours on housework. Concerning education level, 403 (51.3%) of the respondents finished secondary education, 152 (19.3%) had some vocational/diploma certificates, 204 (26%) had a university or college degree, and 2 (.3%) had postgraduate qualifications.

It is worth noting why we included single respondents in the sample. The focus of the current study is work–family enrichment. According to Greenhaus and Powell (2006), work–family enrichment should be conceptualized as the extent to which experiences in one role improve the quality of life in the other role. Role experiences should not be viewed exclusively as those of care providers, i.e., spouses or parents; the experiences of care receivers can be transferred into the work domain and be used to improve the quality of work life as well. For example, the skills and perspectives that young workers develop at home regarding how to maintain a good relationship with family members may help them to have a better relationship with supervisors and coworkers, and vice versa. Therefore, work–family enrichment issues are also relevant to young, unmarried workers.

The first-wave survey included scales for work engagement and its antecedent variables including the availability of family-friendly organizational policies, supervisor support, colleague support, job autonomy, and family support. The second-wave survey included scales for WFE and FWE. Questionnaires of the two surveys were matched through self-identifiable coding. The survey instruments were in Chinese. The translation and back-translation procedure was performed on measures without existing Chinese versions (Brislin, 1980).

Measures

Gender was coded as 0 for men and 1 for women. Age was based on self-reported age in years. Marital status was coded as 0 for single/never married, 1 for married/cohabitating, and 2 for divorced/separated. Education was coded as 1 for secondary education, 2 for vocational/diploma certificates, 3 for university/college degree, 4 for postgraduate degree.

Family-friendly organizational policies

We measured perceived availability of ten family-friendly organizational policies: flexible time, compressed work week, telecommuting, part-time work, on-site child-care centre, subsidized local child-care, child-care information/referral services, paid maternity leave, paid paternity leave, and elder care. These policies were selected because they appear to have received the most research attention (Allen, 2001; Siu & Phillips, 2007). Respondents were asked to answer 0 for “not offered” and 1 for “offered.” The Kuder-Richardson formula 20 (KR-20) index (Kuder & Richardson, 1937) for the internal consistency of FFOP was 0.7 which is acceptable (Nunnally, 1978).

Supervisor support, colleague support and family support

These were measured with three separate sets of items employed by O'Driscoll, Brough, and Kalliath (2004). Respondents were asked how often they had received four different types of support from their supervisor, colleagues, and their family: helpful information or advice, sympathetic understanding and concern, clear and helpful feedback, and practical assistance. A 6-point response scale was used, where 1 = “never” and 6 = “all the time.” α Coefficients for the measures of supervisor support, colleague support, and family support were each .86.

Job autonomy

This was measured by three items from the Job Diagnostic Survey (Hackman & Oldham, 1975). It used a 6-point scale with responses ranging from very inaccurate (1) to very accurate (6). A sample item is “The job gives you a chance to use your personal initiative or judgment in carrying out the work.” Cronbach's α was .71 which is acceptable (Nunnally, 1978).

Work engagement

We used the 17-item Utrecht Work Engagement Scale to measure work engagement (Schaufeli & Bakker, 2010; Schaufeli et al., 2002). Ratings were completed on a 7-point scale ranging from 0 = never to 6 = always. A sample item is “I find the work that I do full of meaning and purpose.” The α coefficient for the measure of work engagement was .93.

WFE and FWE

These were measured by the 18-item scale by Carlson et al. (2006). Ratings were completed on a 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree. A sample item for WFE is “my work helps me to understand different viewpoints and this helps me be a better family member,” and a sample item for FWE is “my family makes me feel happy and this helps me be a

better worker." The α coefficients for the measure of work–family enrichment and family–work enrichment—both assessed at Time 2—were each .90.

Data analysis

Correlation analyses were employed as an initial test of the hypotheses. Structural equation modeling (SEM) analyses using LISREL 8.70 tested the research model connecting family-friendly organizational policies, supervisor support, colleague support, job autonomy, family support, work engagement, and work–family enrichment. As suggested by Anderson and Gerbing (1988), a two-step approach to SEM analysis was employed in the current study. Two measurement models (one model for Time 1 measures and one for Time 2 measures) were first tested to examine the distinctiveness of the measures, then the nested structural model test was employed to test the research hypotheses. According to Little, Cunningham, Shahar, and Widaman (2002), if the investigation goal is to model effects of latent variables at a given level of generality, parceling is warranted because appropriate parceling of items can minimize the effects of nuisance factors at a lower level of generality. For the unidimensional constructs of supervisor support, colleague support, job autonomy, and family support, we combined the items with the highest and the lowest loading by averaging until there were three indicators for each construct (Hau, Wen, & Cheng, 2004; Marsh, Hau, Balla, & Grayson, 1998). For multidimensional constructs like family-friendly organizational policies, work engagement, work–family enrichment, and family–work enrichment, we adopted the domain-representative parceling approach recommended by Kishton and Widaman (1994), which creates parcels by joining items from different dimensions into item sets.

To examine whether the results obtained from the full sample were invariant across gender and marital status, we conducted multiple-group analyses. For example, to examine invariance across gender, we first computed the model separately for men and women to compare fit in each group. Second, to examine whether the magnitude or direction of each hypothesized relationship was invariant across gender, we specified two simultaneous between-group models. In one between-group model, all of the parameter estimates were freely estimated within gender groups. In the other between-group model, the hypothesized relationships were constrained to be invariant across gender. If the χ^2 for the constrained model is significantly larger than the χ^2 for the unconstrained model, the assumption of invariance is not tenable. Finally, if the overall χ^2 difference test revealed a lack of invariance, we examined the parameters to locate specific paths that significantly differed across gender (Bollen, 1989).

Results

Descriptive statistics

The zero-order correlations provided support that employees who scored high in family-friendly organizational policies ($r = .13, p < .01$), supervisor support ($r = .39, p < .01$), colleague support ($r = .24, p < .01$), job autonomy ($r = .31, p < .01$), and family support ($r = .19, p < .01$), also reported high work engagement (see Table 1). Further, those who reported high levels of work engagement also reported high levels of WFE ($r = .31, p < .01$) and FWE ($r = .27, p < .01$).

Model testing

To ensure whether all variables in the model were distinct constructs and the results were not caused by potential impact of common method variance, we compared separate measurement models for the measures employed at Time 1 and those employed at Time 2. For the Time 1 measures, we compared a hypothesized six-factor model (M_{11} , family-friendly organizational policies, supervisor support, colleague support, job autonomy, family support, and work engagement are six distinct factors) with

Table 1
Descriptive statistics, correlations, and reliabilities for analysis variables ($N = 786$).

	Mean (min, max)	SD	1	2	3	4	5	6	7	8	9	10	11	12
Gender (0 = M; 1 = F)	.81 (0, 1)	.40	-											
Age (in years)	25.1 (18, 53)	5.71	-.08*	-										
Marital status	.40 (0, 2)	.50	-.10**	-.62**	-									
Education level	1.74 (1, 4)	.88	-.07	.48**	.20**	-								
FFOP	.22 (0, 1)	.18	.07	-.06	-.03	-.08*	(.67)							
Supervisor support	2.77 (1, 6)	.89	-.02	.19**	.11*	.26**	.06	(.86)						
Colleague support	3.26 (1, 6)	.84	.03	-.00	-.03	.06*	.04	.43**	(.86)					
Job autonomy	3.55 (1, 6)	.99	-.06	.15**	.10**	.19**	.09*	.25**	.11**	(.71)				
Family support	4.03 (1, 6)	1.06	.05	-.04	.05	-.02	.00	.16**	.40**	.00	(.86)			
Work engagement	2.80 (1, 6)	1.13	-.11**	.26**	.24**	.15**	.13**	.39**	.24**	.31**	.19**	(.93)		
WFE	3.19 (1, 5)	.66	-.03	.14**	.09*	.13**	.01	.24**	.12**	.20**	.02	.31**	(.90)	
FWE	3.62 (1, 5)	.60	-.02	-.00	-.01	.03	.02	.14**	.15**	.12**	.21**	.27**	.47**	(.90)

WFE = work-to-family enrichment; FWE = family-to-work enrichment. FFOP = family-friendly organizational policies. Variables in the table are all from Time 2 except FFOP, supervisor support, colleague support, job autonomy, family support, and work engagement. Cronbach's alpha reliabilities are in parentheses on the diagonal (KR-20 index for FFOP). Marital status was coded as 0 for single/never married, 1 for married/cohabitating, and 2 for divorced/separated. Education was coded as 1 for secondary education, 2 for vocational/diploma certificates, 3 for university/college degree, 4 for postgraduate degree. * $p < .05$; ** $p < .01$.

Table 2Model fit summary and measure models comparison ($N = 786$).

	χ^2	df	p	GFI	CFI	NFI	RMSEA
Time 1 measure model							
Six-factor model (M_{11})	332.88	120	<.001	0.96	0.98	0.96	0.046
Five-factor model (M_{12})	1112.44	125	<.001	0.84	0.89	0.88	0.11
Five-factor model (M_{13})	1227.51	125	<.001	0.84	0.88	0.86	0.11
Five-factor model (M_{14})	1100.18	125	<.001	0.86	0.89	0.88	0.11
Time 2 measure model							
Two-factor model (M_{21})	17.26	8	<.05	0.99	1.00	1.00	0.039
One-factor model (M_{22})	1543.97	9	<.001	0.61	0.65	0.65	0.46

χ^2 , chi-square; df, degree of freedom; GFI, goodness of fit index; CFI, comparative fit index; NFI, normed fit index; RMSEA, root mean square error of approximation.

The six-factor model (M_{11}) assumes that family-friendly organizational policies, supervisor support, colleague support, job autonomy, family support, and work engagement are six distinct factors. All the alternative models are five-factor models.

M_{12} is the same as M_{11} except that all items for supervisor support and colleague support loaded on the same factor.

M_{13} is the same as M_{11} except that all items for supervisor support and work engagement loaded on the same factor.

M_{14} is the same as M_{11} except that all items for colleague support and family support loaded on the same factor.

M_{21} assumes that WFE and FWE are distinct.

M_{22} is the same as M_{21} except all items for WFE and FWE loaded the same factor.

three alternative five-factor models (M_{12} , M_{13} , M_{14} , see the note for Table 2 for detailed description). The results presented in Table 2 suggest that M_{11} fit the data better than the alternative models. For the Time 2 measures, we compared the hypothesized two-factor model (M_{21}) with a one-factor model (M_{22}) combining WFE and FWE. As can be seen from Table 2, the results showed that M_{21} provided a better fit to the data.

Alternative structural models were tested against each other to test the research hypotheses. Specifically, the hypothesized partial mediation model (Model A) was compared to a competing full mediation model (Model B) in which all path coefficients from role resources to WFE and FWE were constrained to zero, and to a competing direct model (Model C) in which all path coefficients to and from work engagement were constrained to zero. As shown in Table 3, Model A produced a significantly better fit to the data compared to Model B ($\Delta df = 7$, $\Delta \chi^2 = 246.07$, $p < .001$) and Model C ($\Delta df = 7$, $\Delta \chi^2 = 60.84$, $p < .001$). The absolute values of GFI, CFI, and NFI for Model A were all above the .95, and the value of RMSEA is below .08. Therefore, we concluded that Model A provided the most parsimonious fit to the data (Hau et al., 2004).

The paths and parameter estimates for Model A are shown in Fig. 2. All estimated paths were significant except for the path between colleague support and work engagement. A series of Sobel tests were used to assess the significance of each indirect effect (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Sobel, 1982). The results indicated that the indirect effects of family-friendly organizational policies ($z = 2.21$, $p < .05$), supervisor support ($z = 4.09$, $p < .001$), and job autonomy ($z = 3.81$, $p < .001$) through work engagement on WFE were all in the anticipated direction and were statistically significant. As the direct effect of supervisor support on WFE is not significant, hence work engagement fully mediated the relationship between supervisor support and WFE. Furthermore, the indirect effects of job autonomy ($z = 3.91$, $p < .001$) and family support ($z = 2.60$, $p < .01$) through work engagement on FWE were also significant. As the direct effect of job autonomy on FWE is not significant, work engagement also fully mediated the relationship between job autonomy and FWE. However, colleague support had no indirect effect on WFE ($z = -0.05$, $p > .05$) and FWE ($z = -0.05$, $p > .05$). In sum, these results suggested that work engagement was an important mediator between role resources and work-family enrichment.

To examine whether the findings based on the full sample were invariant across gender and marital status, two series of within- and between-group models was specified. Concerning gender, an examination of the within-group fit indices (Table 4, lines 1 and 2) revealed that the model fit both male and female subgroups well. The χ^2 values for the unconstrained and constrained simultaneous between-group analyses are presented on lines 3 and 4, respectively. The between-group χ^2 difference test ($\Delta df = 14$, $\Delta \chi^2 = 12.54$, $p > .05$) indicated that there were no significant gender differences in the parameter estimates for the hypothesized relationships. The results with male participants might have limited power due to relatively small sample size, but we now have confidence with the results because of the significant paths identified in the model even with only male participants ($n = 150$). Concerning marital status, the within-group fit indices revealed that the model fit well for respondents who were single and those who were married/cohabitating (see Table 4). The between-group χ^2 difference test ($\Delta df = 14$, $\Delta \chi^2 = 14.42$, $p > .05$) also indicated that there were no significant group differences in the parameter estimates for the hypothesized relationships.

Table 3Model fit summary and structural models comparison ($N = 786$).

Model	χ^2	df	GFI	CFI	NFI	RMSEA	Comparison	$\Delta \chi^2$	df
1. Partial mediation model (Model A)	470.80***	227	0.95	0.98	0.97	0.036	1 vs. 2	246.07***	7
2. Full mediation model (Model B)	530.64***	234	0.95	0.98	0.97	0.040	1 vs. 3	60.84***	7
3. Direct model (Model C)	716.87***	234	0.93	0.97	0.95	0.050			

$\Delta \chi^2$, chi-square difference; *** $p < .001$.

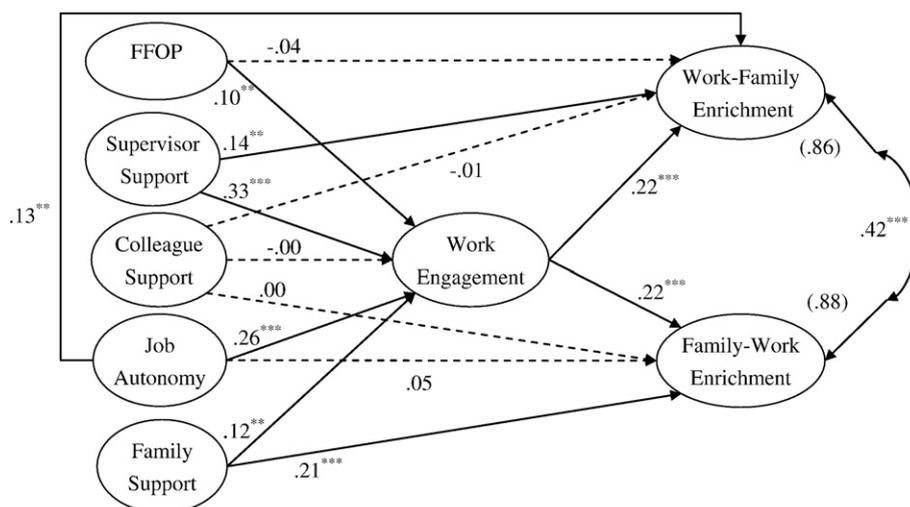


Fig. 2. Summary of standardized path coefficient for the hypothesized mode with the full sample ($N = 786$). Solid lines represent significant coefficients, dotted lines represent nonsignificant coefficients, and bracketed numbers represent variance of the residual error. The double arrow represents the correlation between residual terms. Predictor variables and the mediator variable work engagement have been assessed at Time 1. Work-family enrichment and family-work enrichment were measured at Time 2. FFOP = family-friendly organizational policies. Unconstrained between-group model means all of the parameter estimates were freely estimated within gender/marital status groups. Constrained between-group model means the hypothesized relationships were constrained to be invariant across gender/marital status groups. $\Delta\chi^2$, chi-square difference; *** $p < .001$.

Discussion

The aim of the present study was to empirically test the research propositions put forward by Greenhaus and Powell (2006). We formulated a comprehensive model about work-family enrichment to explicate relevant antecedents that lead to work-family enrichment and to extend research of work-family enrichment to Mainland China. Using two-wave survey data, we tested whether work engagement plays a mediating role in the relationship between role resources and work-family enrichment. The results showed that work engagement fully mediated the relationship between family-friendly organizational policies and WFE, and the relationship between job autonomy and FWE. Work engagement partially mediated the relationships between supervisor support, job autonomy and WFE, and the relationship between family support and FWE. Contrary to our hypotheses, colleague support had neither a significant direct effect on work engagement nor an indirect effect on WFE and FWE.

Research contributions

The findings of our study generally supported the hypotheses derived from Greenhaus and Powell's (2006) theoretical analysis. Work engagement acted as the most proximal factor leading to work-family enrichment. Specifically, the dual-path model of instrumental (job resources) and affective (positive mood) spillover proposed by Greenhaus and Powell (2006) was supported. Work engagement mediated the relationship between role resources (job resources and family support) on the one hand, and work-family enrichment on the other hand.

Table 4

Goodness-of-fit information for within- and between-group comparisons ($N = 786$).

Line	Group	df	χ^2	GFI	CFI	NFI	RMSEA
<i>Gender</i>							
1	Male (within-group, $n = 150$)	227	327.63***	0.86	0.97	0.90	0.045
2	Female (within-group, $n = 623$)	227	396.37***	0.95	0.99	0.97	0.035
3	Unconstrained between-group model	454	724.00***	0.95	0.98	0.95	0.037
4	Constrained between-group model	468	736.54***	0.95	0.98	0.95	0.036
5	$\Delta\chi^2$ (constrained – unconstrained)	14	12.54				
<i>Marital status</i>							
6	Single/never married (within-group, $n = 503$)	227	389.03***	0.94	0.98	0.96	0.037
7	Married/cohabitating (within-group, $n = 267$)	227	317.82***	0.91	0.98	0.94	0.038
8	Unconstrained between-group model	454	706.85***	0.91	0.98	0.95	0.037
9	Constrained between-group model	468	721.27***	0.90	0.98	0.95	0.037
10	$\Delta\chi^2$ (constrained – unconstrained)	14	14.42				

Unconstrained between-group model means all of the parameter estimates were freely estimated within gender/marital status groups. Constrained between-group model means the hypothesized relationships were constrained to be invariant across gender/marital status groups. $\Delta\chi^2$, chi-square difference; *** $p < .001$. Missing data was not reported.

Our results support the hypothesis that role resources are important antecedents of work engagement, supporting the motivational path in the JD-R model (Bakker & Demerouti, 2007; Bakker et al., 2008). Past research tended to assess the positive effects of role resources on work–family enrichment. Compared to the role resources variables such as family-friendly organizational policies, supervisor support, job autonomy, and family support, work engagement had a greater impact on work–family enrichment. These findings suggest that work engagement is an important factor that enables work–family enrichment yet it has been largely neglected in prior research. Consistent with the theoretical propositions of Greenhaus and Powell (2006), merely role resources may not result in work–family enrichment; however, if these resources are helpful for role performance and promote role experiences, the role performers are more likely to transfer the gains from one role to another role. Work engagement therefore captures the nature of the positive role experiences at work and explains more variance in work–family enrichment than role resources alone.

Our findings demonstrated that work engagement fully mediated family-friendly organizational policies and work–family enrichment. As argued earlier, family-friendly organizational policies could enhance employees' control over their schedule and motivation. This psychological state of work engagement would be beneficial to the employees in terms of preventing work and family responsibilities from interfering with each other (Brough, et al., 2005; Lu et al., 2009; Siu & Phillips, 2007).

We found that work engagement partially mediated the positive impact of supervisor support on WFE. This suggests that supervisor support does not necessarily promote subordinates' work–family enrichment by reducing work demands, and supervisors could help subordinates' work–family enrichment by enhancing subordinate's work role experience. Furthermore, work engagement was found to mediate the positive impacts of job autonomy on both types of work–family enrichment. This finding suggests that employees who perceived more autonomy at work would feel higher levels of work–family enrichment. Higher autonomy means more freedom to choose the specific time and methods for work tasks. Employees who are autonomous have skill discretion and can be creative at work; foster work engagement. Vigor, dedication, and absorption, in turn, are likely candidates to influence the atmosphere at home in a positive way and result in work–family enrichment (see also Bakker & Geurts, 2004).

Our findings corroborate the results of some existing research. For instance, Butler (2007) found that resources-enriching job characteristics such as job–school congruence and job control were positively related to work–school facilitation of working college students. Our findings suggest that these job characteristics may actually induce work engagement, which in turn enhances work and school life facilitation. Gordon et al. (2007) failed to find any impact of supportive organizational work–family culture on work–family enhancement. According to our findings, organizational work–family culture was not a proximal factor in predicting work–family enhancement and might not have strong impact on work engagement either. Furthermore, Innstrand, Langballe, Falkum, Espnes, and Aasland (2009) found that workers experiencing the most conflict also experienced the most facilitation. The underlying factor should be work engagement because those experiencing the most work–family conflict were more likely to be highly engaged, hence they experienced higher levels of facilitation.

Our findings also advance research of the JD-R model by adding family support as another resource in addition to job resource and personal resource. We provide evidence that family support, which is a kind of collectivistic coping, is a role resource among Chinese employees (Yeh et al., 2006). The economy in China has, in recent decades, undergone a shift from production-based to an emphasis on service and knowledge. This transition has placed an increased demand on worker's competencies and capabilities to deal with changes, challenges, and overcome adversities (e.g., Siu et al., 2009). Because of the highly collectivistic culture, employees in China are thus more likely to go back to the basic unit in society—"family"—to seek resources to manage such changes.

Analyses examining the generalizability of our model yielded no significant evidence of gender and marital status differences in the overall fit of the model or in the magnitude or direction of the hypothesized relationships. This offers further support for the external validity of our findings. Although the combination of work and family may be a rather different experience for male and female employees in China and for individuals with different marital status, the psychological processes seem to hold for both genders and for several family types.

Our findings imply again that the enrichment and conflict components of work–family interface are distinct, and the processes underlying work–family conflict cannot simply be generalized to work–family enrichment. Work–family conflict is driven more by role demands, hence many empirical studies examine the work–family experiences of married sample or those with children; whereas work–family enrichment is generated from personal experiences in work and family roles. However, our findings showed no significant difference between marital status, therefore experiences in family role should be viewed in a broader sense than marriage and having children when examining work–family enrichment issues in future research.

In sum, although the present study does not support a fully mediated relationship between role resources and work–family enrichment via work engagement, our study is the first investigation to date that provides evidence linking the JD-R model and the work–family enrichment model. We also conclude that the theory of work–family enrichment developed within a Western context is also generalizable to Chinese samples.

Research limitations

Some limitations of this study should be noted. First, the present study did not assess a potential parallel mediating factor, family engagement, which may bridge the relationship between family resources and work–family enrichment. Second, the study was based on self-reports that may raise questions of common method bias (e.g., Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, the results of confirmatory factor analyses showed that all variables could be empirically distinguished and thus not

subject to common method variance. In addition, our predictors were separated in time from the outcomes, which lowers the likelihood of finding correlations due to consistency in responses. Nevertheless, it would be beneficial to include objective indicators of job and family performance in future research to validate and expand our findings. A third possible limitation may be a demographical feature in the respondents that over half of them were not married or having children. As afore-mentioned, work–family enrichment emphasizes work experiences and family roles, regardless of the roles as care providers or care receivers, so the marital or parental status of respondents need not necessarily influence the findings.

Practical implications

The practical implications of the present two-wave study are obvious. For managers, our findings provide further evidence regarding the “intrinsic rewards” (Thomas, 2009) that work can produce and their importance in helping employees balancing work and family life. Our findings encourage CEOs or human resource managers to provide more job resources in the workplace such as family-friendly organizational policies, supervisor support and job autonomy. For instance, a positive leadership style should be encouraged. Supervisors may communicate the meanings and prospective vision of the work being undertaken, and supervisors can also provide advices and help to subordinates so that they feel confident in achieving their work goals. Our findings also indicate to managers the importance of valuing employees' family lives because family life is an important source of support and meaning for employees' engagement in the workplace. For employees, our findings suggest that work means much more than an instrumental support for family; it is engagement at work, rather than reduced participation at work, that contributes to their perception of enriched work and family life.

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