

Lingnan University

Digital Commons @ Lingnan University

Staff Publications

Lingnan Staff Publication

12-1-2010

Role resources and work-family enrichment : the role of work engagement

Oi Ling SIU

Lingnan University, Hong Kong

Jia Fang LU

Hong Kong Institute of Education, Hong Kong

Paula BROUGH

Griffin University, Australia

Changqin LU

Peking University, China

Arnold B. BAKKER

Erasmus University Rotterdam, The Netherlands

See next page for additional authors

Follow this and additional works at: https://commons.ln.edu.hk/sw_master



Part of the [Psychology Commons](#)

Recommended Citation

Siu, O. L., Lu, J. F., Brough, P., Lu, C., Bakker, A. B., Kalliath, T.,...Shi, K. (2010). Role resources and work-family enrichment: The role of work engagement. *Journal of Vocational Behavior*, 77(3), 470-480. doi: 10.1016/j.jvb.2010.06.007

This Journal article is brought to you for free and open access by the Lingnan Staff Publication at Digital Commons @ Lingnan University. It has been accepted for inclusion in Staff Publications by an authorized administrator of Digital Commons @ Lingnan University.

Authors

Oi Ling SIU, Jia Fang LU, Paula BROUGH, Changqin LU, Arnold B. BAKKER, Thomas KALLIATH, Michael O'DRISCOLL, David Rosser PHILLIPS, Wei-qing CHEN, Danny LO, Cindy SIT, and Kan SHI

Accepted Manuscript

Role resources and work-family enrichment: The role of work engagement

Oi-ling Siu, Jia-fang Lu, Paula Brough, Chang-qin Lu, Arnold B. Bakker, Thomas Kalliath, Michael O'Driscoll, David R. Phillips, Wei-qing Chen, Danny Lo, Cindy Sit, Kan Shi

PII: S0001-8791(10)00119-3
DOI: doi: [10.1016/j.jvb.2010.06.007](https://doi.org/10.1016/j.jvb.2010.06.007)
Reference: YJVBE 2446

To appear in: *Journal of Vocational Behavior*

Received date: 28 March 2010



Please cite this article as: Siu, O.-, Lu, J.-, Brough, P., Lu, C.-, Bakker, A.B., Kalliath, T., O'Driscoll, M., Phillips, D.R., Chen, W.-, Lo, D., Sit, C. & Shi, K., Role resources and work-family enrichment: The role of work engagement, *Journal of Vocational Behavior* (2010), doi: [10.1016/j.jvb.2010.06.007](https://doi.org/10.1016/j.jvb.2010.06.007)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Role Resources and Work-Family Enrichment: The Role of Work Engagement¹Oi-ling Siu²

Lingnan University, Hong Kong

Jia-fang Lu

Hong Kong Institute of Education, Hong Kong

Paula Brough

Griffin University, Australia

Chang-qin Lu

Peking University, PR China

Arnold B. Bakker

Erasmus University Rotterdam, The Netherlands

Thomas Kalliath,

The Australian National University, Australia

Michael O'Driscoll

Waikato University, New Zealand

David R. Phillips

Lingnan University, Hong Kong

Wei-qing Chen

Dr. Sun Yat-sen University, PR China

Danny Lo

Shue Yan University, Hong Kong

Cindy Sit

The University of Hong Kong, Hong Kong

Kan Shi

Chinese Academy of Sciences, PR China

¹ This work has been supported by the RGC research grants in Lingnan University (Project Nos.: DR07B7, DS08A4 & DR09A2).

² Correspondence concerning this article is addressed to Prof. Oi-ling Siu at: Department of Sociology and Social Policy, Lingnan University, Tuen Mun, N. T., Hong Kong; Tel: 852-26167170; Fax: 852-28917940; Email: siuol@ln.edu.hk

Role Resources and Work-Family Enrichment: The Role of Work Engagement

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 non-work 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.

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 bi-directional 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's work (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.

Whilst 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, Cooper, Poelmans et al., 2004; Spector, Allen, Poelmans et al., 2007). Cultural characteristics as well as the macro-environment 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. Additionally, 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, González-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 co-exist 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 and 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; Lu et al., 2009; Siu & Philips, 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 can't 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 (Grywacz & Marks, 2000). Additionally, 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 (Grywacz & 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 promote 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 Figure 1.

Insert Figure 1 about here

Method

Participants

We adopted a 2-wave longitudinal design for testing the hypotheses. The respondents were drawn from hospitals in Guangzhou and an eye glasses 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.

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 ($M = 25$, $SD = 6.0$). 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. 197 (25.1%) respondents had one child, 27 (3.4%) had two children, and only one (.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 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”. Alpha coefficients for the measures of supervisor support, colleague support, and family support were each .86.

Job autonomy 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 alpha 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 alpha coefficient for the measure of work engagement was .93.

WFE and *FWE* were measured by the eighteen-item scale by Carlson, Kacmar, Wayne, and Grzywacz (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 alpha 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 Kishiton 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 chi-square for the constrained model is significantly larger than the chi-square for the unconstrained model, the assumption of invariance is not tenable. Finally, if the overall chi-square 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 ($r = .27, p < .01$).

Insert Table 1 about here

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 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.

Insert Table 2 about here

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 NF 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).

Insert Table 3 about here

The paths and parameter estimates for Model A are shown in Figure 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.

Insert Figure 2 and Table 4 about here

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 chi-square values for the unconstrained and constrained simultaneous between-group analyses are presented on lines 3 and 4 respectively. The between-group chi-square 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 chi-square 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.

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.

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 & Philips, 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, and Falkum (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, Hui, Phillips, Lin, Wong, & Shi, 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. Even though 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, even though 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.

References

- Allen, T. D. (2001). Family-supportive work environments: the role of organizational perceptions. *Journal of Vocational Behavior*, *58*, 414–435.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*, 411–423.
- Aryee, S., Srinivas, E. S., & Tan, H. H. (2005). Rhythms of Life: Antecedents and Outcomes of Work-Family Balance in Employed Parents. *Journal of Applied Psychology*, *90*, 132–146.
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, *22*, 309–328.
- Bakker, A. B., & Geurts, S. (2004). Toward a dual-process model of work-home interference. *Work & Occupations*, *31*, 345–366.

Bakker, A. B., & Leiter, M. P. (Eds.) (2010). *Work engagement: A handbook of essential theory and research*. New York: Psychology Press.

Bakker, A. B., & Schaufeli, W. B. (2008). Positive organizational behavior: Engaged employees in flourishing organizations. *Journal of Organizational Behavior*, 29, 147–154.

Bakker, A. B., Schaufeli, W. B., Leiter, M. P. and Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & Stress*, 22, 187–200.

Bollen, K. A. (1989). *Structural Equations with Latent Variables*, New York: Wiley.

Brislin, R. W. (1980). Translation and content analysis of oral and written materials. In H. C. Triandis, & J. W. Berry (Eds.), *Handbook of cross-cultural psychology: Methodology* (Vol. 2, pp. 389–444). Boston: Allyn & Bacon.

Brough, P., O’Driscoll, M., & Kalliath, T. (2005). The ability of ‘family-friendly’ organizational resources to predict work-family conflict and job and family satisfaction. *Stress and Health*, 21, 223–234.

Butler, A. B. (2007). Job characteristics and college performance and attitudes: A model of work-school conflict and facilitation. *Journal of Applied Psychology*, 92, 500–510.

Carlson, D. S., Kacmar, K. M., Wayne, J. H., & Grzywacz, J. G. (2006). Measuring the positive side of the work-family interface: Development and validation of a work-family enrichment scale. *Journal of Vocational Behavior*, 68, 131–164.

Carlson, D. S., Kacmar, M. K., & Williams, L. J. (2000). Construction and validation of a multidimensional measure of work–family conflict. *Journal of Vocational Behavior*, 56,

249–276.

Deci, W. L., & Ryan, R. M. (1985), *Intrinsic Motivation and Self-Determination in Human Behavior*, Plenum, New York, NY.

Demerouti, E., & Cropanzano, R. (2010). From thought to action: Employee work engagement and job performance. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research*. New York: Psychology Press.

Eby, L. T., Casper, W. J., Lockwood, A., Bordeaux, C., & Brinley, A. (2005). A retrospective on work and family research in IO/OB: A content analysis and review of the literature [Monograph]. *Journal of Vocational Behavior*, 66, 124–197.

Edwards, J. R., & Rothbard, N. P. (2000). Mechanisms linking work and family: Clarifying the relationship between work and family constructs. *Academy of Management Review*, 25, 178–199.

Families and Work Institute. (1998). *The 1997 National study of the changing workforce, executive summary*. New York: Families and Work Institute.

Frone, M. R. (2003). Work-family balance. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 143–162). Washington, DC: American Psychological Association.

Gordon, J. R., Whelan-Berry, K. S., & Hamilton, E. A. (2007). The relationship among work-family conflict and enhancement, organizational work-family culture, and work outcomes for older working women. *Journal of Occupational Health Psychology*, 12, 350–364.

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, *10*, 76–88.

Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: A theory of work-family enrichment. *Academy of Management Review*, *31*, 72–92.

Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology*, *5*, 111–126.

Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, *60*, 159–170.

Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.

Halbesleben, J. R. B. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources and consequences. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research*. New York: Psychology Press.

Hau, K. T., Wen, Z. L., & Cheng, Z. J. (2004). *Structural Equation Model and Its Applications* (pp.137-139). Beijing: Educational Science Publishing House (in Chinese).

Innstrand, S. T., Langballe, E. M., & Falkum, E. (2010). Exploring occupational differences in work–family interaction: Who is at risk? *International Journal of Stress Management*, *17*, 38–55.

Innstrand, S. T., Langballe, E. M., Falkum, E., Espnes, G. A., & Aasland, O. G. (2009).

Gender-specific perceptions of four dimensions of the work/family interaction. *Journal of Career Assessment*, 17, 402–416.

Kishton, J. M., & Widaman, K. F. (1994). Unidimensional versus domain representative parceling of questionnaire items: An empirical example. *Educational and Psychological Measurement*, 54, 757–765.

Kuder, G. F., & Richardson, M. W. (1937). The theory of the estimation of test reliability. *Psychometrika*, 2, 151–60.

Ling, Y., & Powell, G. N. (2001). Work-family conflict in contemporary China: Beyond an American-based model. *International Journal of Cross-Cultural Management*, 1, 357–373.

Little, T. D., Cunningham, W. A., Shahar, G. & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, 9, 151–173.

Lu, J. F., Shi, K., & Lawler, J. (2002). A preliminary model of work-family conflict. *Chinese Journal of Applied Psychology*, 8, 45–52. (in Chinese)

Lu, J. F., Siu, O. L., Spector, P., & Shi, K. (2009). Antecedents and outcomes of a four-fold taxonomy of work-family balance in Chinese employed parents. *Journal of Occupational Health Psychology*, 14, 182–192.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects.

Psychological Methods, 7, 83–104.

Marsh, H. W., Hau, K. T., Balla, J. R., & Grayson, D. (1998). Is more ever too much? The number of indicators per factor in confirmatory factor analysis. *Multivariate Behavioral Research*, 33, 181–220

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

O'Driscoll, M., Brough, P., & Kalliath, T. (2004). Work-family conflict, psychological well-being, satisfaction and social support: a longitudinal study in New Zealand. *Equal Opportunities International*, 23, 36–56.

O'Driscoll, M., Brough, P., & Kalliath, T. (2006). Work-family conflict and facilitation. In F. Jones, R. J. Burke & M. Westman (Eds.), *Work-life balance: A psychological perspective* (pp. 117–142). Hove, UK: Psychology Press.

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879–903.

Ryan, R. M., & Frederick, C. M. (1997). On energy, personality, and health: subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, 65, 529–65.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25, 293–315.

Schaufeli, W. B., & Bakker, A. B. (2010). Defining and measuring work engagement: Bringing clarity to the concept. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 10–24). New York: Psychology Press.

Schaufeli, W. B., Salanova, M., Gonzalez-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, 3, 71–92.

Seligman, M., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55, 5–14.

Seligman, M. E. P., Rashid, T., & Parks, A. C. (2006). Positive Psychology. *American Psychologists*, 61, 774–788.

Siu, O. L., Hui, H. C., Phillips, D. R., Lin, L., Wong, T. W., & Shi, K. (2009). A study of resiliency among Chinese health care workers: Capacity to cope with workplace stress. *Journal of Research in Personality*, 43, 770–776.

Siu, O. L., & Phillips, D. R. (2007). Research on Family-friendly Employment Policies and Practices (FEPPs) - Executive Summary. Equal Opportunity Commission and Women's Commission, Hong Kong SARG.

Siu, O. L., Spector, P. E., Cooper, C. L., & Lu, C. Q. (2005). Work stress, self-efficacy, Chinese work values and work well-being in Hong Kong and Beijing. *International Journal of Stress Management*, 12, 274–288.

Spector, P. E., Cooper, C. L., Poelmans, S., Allen, T. D., O'Driscoll, M., Sanchez, J.

I., Siu O. L., Dewe, P., Hart, P., Lu, Luo, Renault de Moraes, L., Ostrognay, G. M., Sparks, K., Wong, P., Yu, S. F. (2004). A Cross-National Comparative Study of Work-Family Stressors, Working Hours, and Well-Being: China and Latin America versus the Anglo World. *Personnel Psychology*, *57*, 119–142.

Spector, P. E., Allen, T. D., Poelmans, S., Lapierre, L. M., Cooper, C. L., O'Driscoll, M., Sanchez, J. I., Abarca, N., Alexandrova, M., Beham, B., Brough, P., Ferreiro, P., Fraile, G., Lu, C. Q., Lu, L., Moreno-Velázquez, I., Pagon, M., Pitariu, H., Salamatov, V., Shima, S., Simoni, A. S., Siu, O. L., & Widerszal-Bazyl, M. (2007). Cross-National Differences in Relationships of Work Demands, Job Satisfaction and Turnover Intentions with Work-Family Conflict. *Personnel Psychology*, *60*, 805–835.

Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290–312). San Francisco: Jossey-Bass.

Thomas, K. W. (2009). *Intrinsic Motivation at Work: What Really Drives Employee Engagement*. San Francisco: Berrett-Koehler.

Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout and engagement: The role of basic psychological need satisfaction. *Work & Stress*, *22*, 277–294.

Voydanoff, P. (2004). Implications of Work and Community Demands and Resources for Work-to-Family Conflict and Facilitation. *Journal of Occupational Health Psychology*, *9*, 275–285.

Witt, L. A., & Carlson, D. S. (2006). The work-family interface and job performance: Moderating effects of conscientiousness and perceived organizational support. *Journal of Occupational Health Psychology, 11*, 343–357.

Yang, N., Chen, C. C., Choi, J., & Zou, Y. (2000). Sources of work-family conflict: A Sino-U.S. comparison of the effects of work and family demands. *Academy of Management Journal, 43*, 113–123.

Yeh, C. J., Arora, A. K., & Wu, K. A. (2006). A new theoretical model of collectivistic coping. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of multicultural perspectives on stress and coping* (pp. 55–72). New York: Springer.

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

12. FWE	3.62 (1, 5)	.60	-.02	-.00	-.01	.03	.02	.14**	.15**	.12**	.21**	.27**	.47**	(.90)
---------	-------------	-----	------	------	------	-----	-----	-------	-------	-------	-------	-------	-------	-------

Note. 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 2

Model Fit Summary and Measure Models Comparison (N=786)

Time 1 measure model	χ^2	<i>df</i>	<i>p</i>	GFI	CFI	NFI	RMSEA
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	χ^2	<i>df</i>	<i>p</i>	GFI	CFI	NFI	RMSEA
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

Note. 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 WEF and FWE loaded the same factor.

Table 3

Model Fit Summary and Structural Models Comparison (N=786)

Model	χ^2	<i>df</i>	GFI	CFI	NFI	RMSEA	Comparison	$\Delta\chi^2$	<i>df</i>
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			

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

Table 4

Goodness-of-Fit Information for Within- and Between-Group Comparisons (N=786)

Line	Group	<i>df</i>	χ^2	GFI	CFI	NFI	RMSEA
Gender							
1	Male (within-group, <i>n</i> = 150)	227	327.63***	0.86	0.97	0.90	0.045
2	Female (within-group, <i>n</i> = 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				
Marital Status							
6	Single/Never married (within-group, <i>n</i> = 503)	227	389.03***	0.94	0.98	0.96	0.037
7	Married/Cohabiting (within-group, <i>n</i> = 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				

Note.

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; *** $p < .001$.

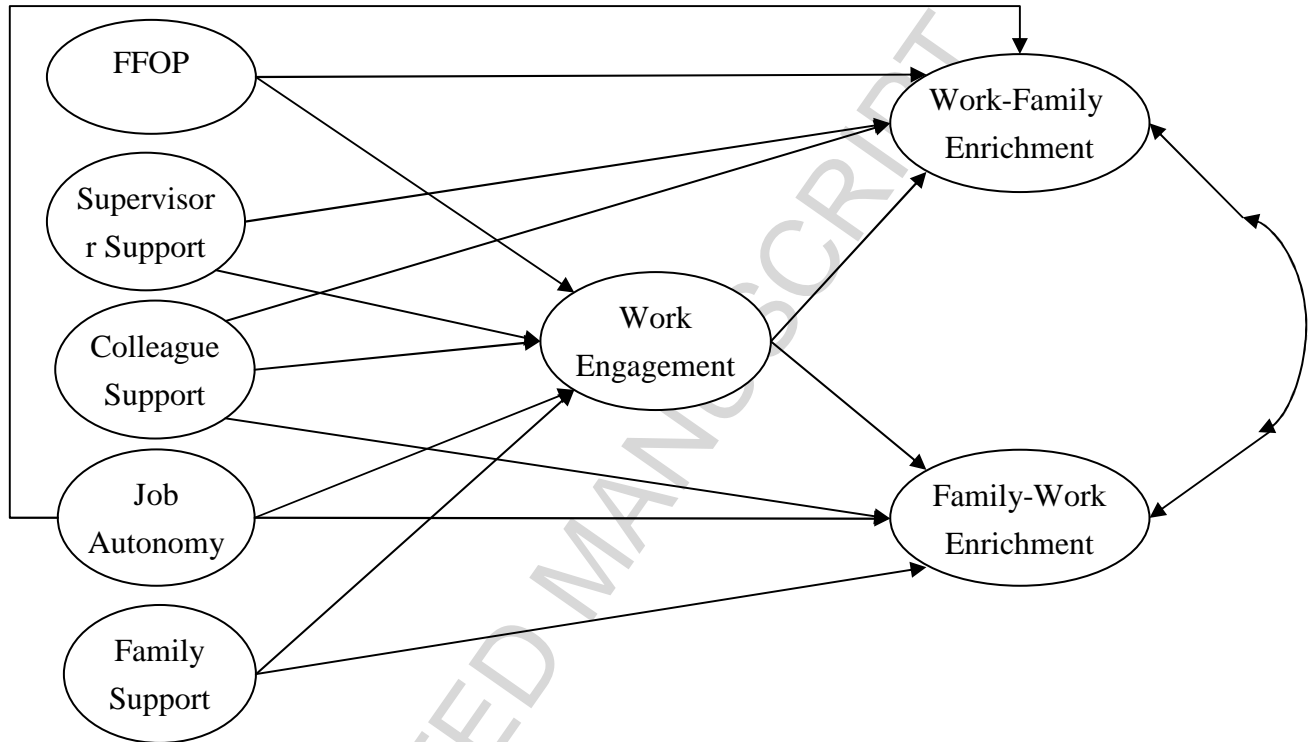


Figure 1.

A General Theoretical Model

Note.

FFOP = family-friendly organizational policies.

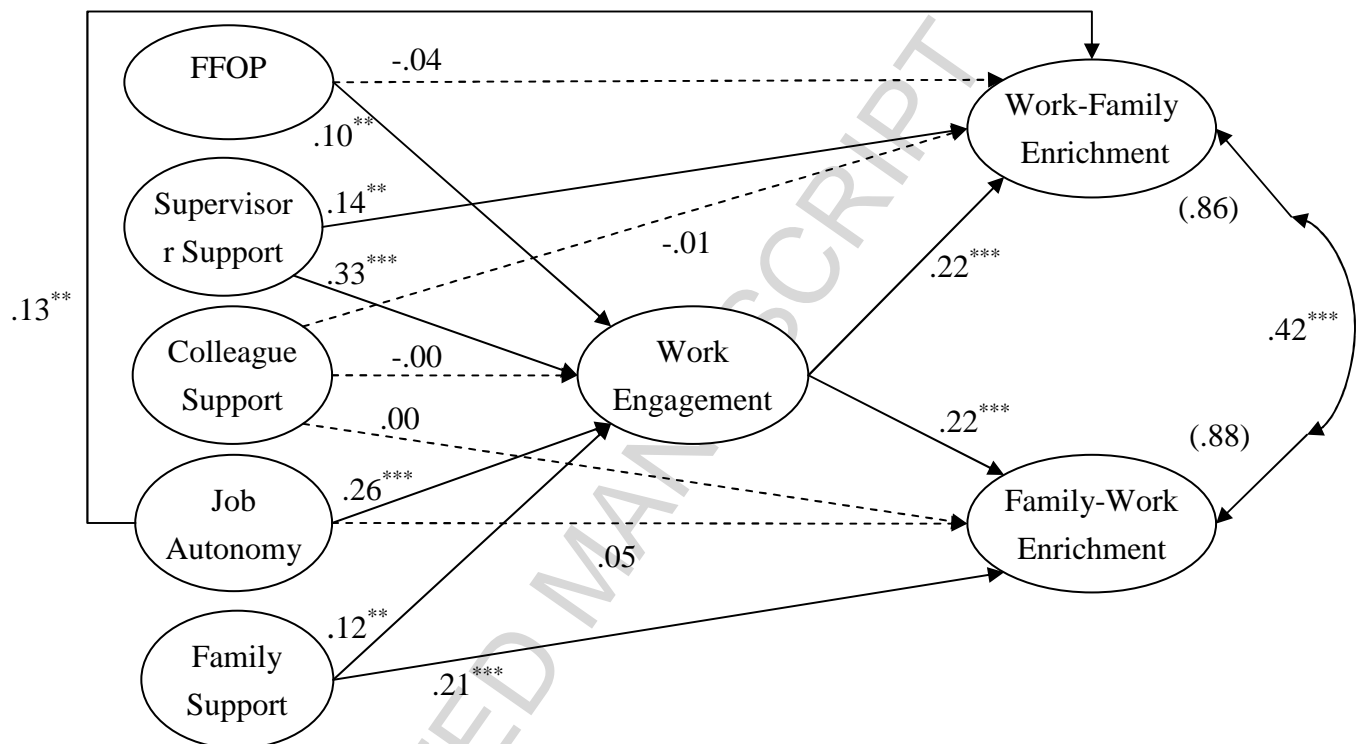


Figure 2.

Summary of standardized path coefficient for the hypothesized mode with the full sample ($N = 786$).

Note.

Solid lines represent significant coefficients, dotted lines represent non-significant 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.

Note.

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; $*** p < .001$.