

Work-family conflict and withdrawal behavior among mainland China's IT employees: the mediating role of emotional exhaustion and moderating role of job autonomy

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Abstract: Since the turn of the millennium, the information technology (IT) industry has been growing rapidly in mainland China. One of the significant characteristics of IT employees in mainland China during the past decades was that they tended to work more overtime, which might result in more work-family conflicts and higher turnover rates. Our study tested the mechanism of work-family conflict and work withdrawal behaviors using data from 389 IT employees in mainland China. Using the job demands-resources model and the conservation of resources theory, we examined the mediating effect of emotional exhaustion and the moderating effect of job autonomy. The results indicated that work-to-family conflict was negatively related with work withdrawal behaviors, whereas family-to-work conflict was positively related with work withdrawal behaviors. Moreover, we found the opposite moderating role of job autonomy, which enhanced the relationships between emotional exhaustion and work withdrawal behaviors. That is, the relationship was stronger among employees with higher job autonomy than among those with lower job autonomy. These findings indicate that work-family conflict relates to employees' psychological well-being and behavior, and that job autonomy might play a special role between work-family conflict and work withdrawal behaviors.

Key words: Information technology, Work-family conflict, Emotional exhaustion, Work withdrawal behaviors, Job autonomy

Introduction

The information technology (IT) industry has developed rapidly in mainland China in recent decades, employing

millions of workers in first-tier cities such as Beijing, Shanghai, Hangzhou, and Shenzhen. Although they offer a comparatively higher salary than other industries, IT jobs also involve higher work stress and higher turnover rate. For instance, a 2016 technology media report on IT industry employees' living conditions based on 3,780 questionnaires¹⁾ showed that more than one-fifth of the participants worked overtime every day, and more than one-quarter of

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the participants worked overtime for more than half a month. This indicates that IT employees might suffer from overwork and have less time for their personal or family lives, causing more work-family conflict. Thus, we wondered whether there was a correlation between work-family conflict and work withdrawal behaviors (WWB) among IT employees and intended to explore the mechanism between them.

Researchers in the field of occupational health psychology have focused on work-family conflict since the 1990s. A meta-analysis indicated that work-family conflict in both directions—that is, work-to-family conflict (WFC) and family-to-work conflict (FWC)—was consistently associated with work- and family-related outcomes². However, few studies have focused on both the relationships as well as the mechanism between work-family conflict and WWB among employees in IT industry. We chose WWB as the dependent variable because we believe it could reflect significant details about how employees exhibited negative work behaviors that harmed organizations and led to employee turnover.

Theoretically, we integrated the job demands-resources (JD-R) model³⁻⁶ and the conservation of resources (COR) theory⁷, examining the mediating effect of emotional exhaustion in the relationship between work-family conflict and WWB. Furthermore, job autonomy, a critical job resource, was added to the study model as a moderator for two reasons. First, when certain demands—such as time, stress, or behaviors—occurred in one domain⁸, work-family conflict hindered employees' role performance in the other domain⁹. Job autonomy could be helpful for employees in managing these different types of work-family conflict. Second, compared with other industries, the IT industry is known for relatively high-level job autonomy, as it tends to implement result-oriented management.

Additionally, this study tested how the model of work-family conflict, which was developed in Western countries, could be generalized to other contexts, such as mainland China. In our study of IT employees in mainland China, we examined the following research questions: first, did WFC and FWC have different relationships with WWB? Second, did emotional exhaustion mediate the relationships between WFC or FWC and WWB? Third, did job autonomy moderate the relationship between WFC or FWC and WWB through emotional exhaustion?

Theoretical Framework

The JD-R model was originally proposed as a two-process theory to explain burnout³ and has gradually evolved

into a comprehensive occupational stress model for understanding various dimensions of employees' issues⁵. In this framework, job characteristics are classified into two categories—job demands and job resources. Job demands requires employees to make continuous efforts, which would produce corresponding losses, while job resources promote the realization of goals⁵. Furthermore, the JD-R model has been extended to the family field by adding family demands and resources^{10, 11}. Both forms of conflict result from an individual's attempts to meet an overabundance of demands emanating from the home/family and work domains¹². The demands coming from one domain make the performance of roles in the other domain more difficult. Numerous job demands and job resources have been identified as determinants of work-family conflict^{9, 13}. Meanwhile, predictors of work-family conflict could also come from family domains (family demands and resources)^{9, 13}. Due to its unique nature, WFC has been conceptualized differently in the stressor-strain chain as either an independent¹⁴, dependent¹⁵, or intervening¹⁶ variable. Baeriswyl and colleagues demonstrated a promising extension to view work-family conflict as an intervening variable in the JD-R model¹⁷. They suggested that WFC partially mediated the impact of supervisor support and workload on job satisfaction and emotional exhaustion. Therefore, in our study, we considered that work-family conflict served as a mediating role between job demands/resources as well as home demands/resources and emotional exhaustion, withdrawal behaviors. Another critical assumption of the JD-R model argued for the interaction effect between job demands and job resources^{4, 5}; for instance, job demand's impact could be buffered by job resources on burnout¹⁸. Empirical evidence has supported that employees with more job resources tend to cope better with their job demands^{5, 14}.

The COR theory also supports the paths from WFC/FWC to emotional exhaustion and withdrawal behaviors¹⁹. One fundamental proposition in COR is that individuals seek to acquire and maintain resources, and stress is a reaction to an environment in which there is the threat of loss, an actual loss, or lack of an expected gain in resources. As more conflict is experienced in one domain, fewer resources are available to fulfill one's role in another domain. Therefore, work-family conflict emerges. Experiencing high levels of conflict at work might drain available resources and leave fewer resources for family demands, leading to emotional exhaustion, and vice versa. Further, certain types of behaviors, such as WWB, will be produced to replace, or protect the threatened resources.

To sum up, we considered WFC and FWC as results of

job demands and family demands, respectively, whereas job autonomy was conceptualized as a job resource. Moreover, emotional exhaustion was conceptualized as strain, and WWB was conceptualized as a performance or outcome variable.

Work-Family Conflict, Emotional Exhaustion, and Work Withdrawal Behavior

Carpenter and Berry's meta-analytic study²⁰⁾ suggested that withdrawal behaviors may be best represented as one aspect of counterproductive work behaviors, which include turnover intention, lateness, and absenteeism²¹⁾. Hanisch and Hulin²²⁾ distinguished two kinds of withdrawal behaviors, one was job withdrawal performed by employees in order to avoid participating in unsatisfactory working conditions such as turnover rates, and the other was work withdrawal, referring to employees reducing their time working while maintaining their current positions such as lateness. In this study, we concentrated on testing the relationships between WFC/FWC and WWB, as some studies have already proved work-family conflict influenced job withdrawal behaviors, especially turnover rates^{23–25)}, whereas the focus on WWB has been relatively less. Scholars posited that WWB has often been a common, and expensive concern for organizations²⁶⁾, reflecting aspects of employees' feelings or situations before these experiences finally accumulated to drive turnover.

Work-family conflict was defined as conflict between employees' contradictory work and family roles, resulting in difficulty fulfilling the requirements of either or both roles⁸⁾. Research has demonstrated that work and family are interrelated²⁷⁾—work influences family, and family affects work. Hence, WFC and FWC are manifestations of this role conflict. Scholars have observed that more work-family conflict tends to relate to lower levels of job satisfaction²⁸⁾ and career satisfaction²⁹⁾, both of which relate to withdrawal tendencies³⁰⁾. In the relationship between work-family conflict and WWB, Hammer and Bauer³¹⁾ found a significant association between WFC/FWC and WWB. Boyar and Maertz³²⁾ also proved that WFC had a positive relationship with employees leaving work early, while FWC did not show any such significant relationships.

Recently, researchers have shown more interest in cultural or national differences in work-family conflict^{33–35)}. Meta-analytic results from Allen and French³³⁾ demonstrate that levels of FWC were comparatively higher in more collectivistic than more individualistic cultures, as well as in countries other than the United States. Moreover, they revealed the moderating role of collectivism in the relation-

ships between WFC or FWC and satisfaction outcomes, suggesting that relationships were stronger in less collectivistic than more collectivistic contexts³⁵⁾. Therefore, it would be worth exploring the empirical relationship between both WFC/FWC and WWB in different nations and cultures, such as mainland China, to support cross-cultural research on work-family conflict issues. Based on previous studies, we assumed that both WFC and FWC were positively related to WWB and explored whether WFC and FWC had different associations with WWB. We proposed the following hypotheses:

H1: Higher WFC would be positively associated with higher WWB.

H2: Higher FWC would be positively associated with higher WWB.

Emotional exhaustion was one of the three dimensions of burnout proposed by Maslach³⁶⁾ and considered the core aspect of burnout^{37, 38)}. It referred to individuals' feelings of being emotionally overextended or depleted³⁷⁾. Burnout, especially emotional exhaustion, affected the overall mental health of employees³⁹⁾ and became a concern for organizations⁴⁰⁾.

According to the JD-R model⁵⁾, overwhelming job or family demands would lead to conflict between family and work, in which case employees would easily feel difficulty and exhaustion in meeting both work and family requirements. Emotional exhaustion was harmful to employees, and exhausted employees often lacked sufficient resources and energy to attain their work goals. Ahuja, Chudoba²³⁾ found that among IT personnel, work exhaustion mediated the relationship between work-family conflict and turnover rates. We propose the following hypotheses:

H3: Emotional exhaustion would act as a mediator between WFC and WWB.

H4: Emotional exhaustion would act as a mediator between FWC and WWB.

The Moderating Effect of Job Autonomy

Job autonomy, identified as one of the key features of work design⁴¹⁾, refers to the degree to which employees have discretion over important decisions at work^{42, 43)}. Job autonomy is a critical job resource in the JD-R model¹¹⁾. In his meta-analytic study, Spector⁴⁴⁾ found that autonomy was related to higher emotional distress, role conflict, and absenteeism. By providing employees with more resources to handle stressful circumstances, increased levels of job autonomy reduced the harmful consequences of job demands. Brauchli, Bauer⁴⁵⁾ suggested that job autonomy was a buffer associated with work-life conflict and turnover

rate, but not with life-work conflict.

In this study, we assumed that employees with higher levels of job autonomy managed both WFC and FWC more flexibly and had lower levels of emotional exhaustion than employees with lower levels of job autonomy. Moreover, employees with higher levels of job autonomy might have more space to engage in recovery activities when they experience emotional exhaustion resulting in less frequent WWB. We propose the following hypotheses:

H5: Job autonomy would moderate the positive effect between WFC and emotional exhaustion. The effect is stronger for people with low job autonomy than high job autonomy.

H6: Job autonomy would moderate the positive effect between FWC and emotional exhaustion. The effect is stronger for people with low job autonomy than high job autonomy.

H7: Job autonomy would moderate the positive effect between emotional exhaustion and WWB. The effect is stronger for people with low job autonomy than high job autonomy.

Based on these hypotheses, we further propose that the indirect effect of work-family conflict on WWB through emotional exhaustion would be stronger for employees with lower rather than higher levels of job autonomy. We propose the following hypotheses:

H8: Job autonomy would moderate the indirect effect of emotional exhaustion on the relationship between WFC and WWB. The effect is stronger for people with low job autonomy than high job autonomy.

H9: Job autonomy would moderate the indirect effect of emotional exhaustion on the relationship between FWC and WWB. The effect is stronger for people with low job autonomy than high job autonomy.

Subjects and Methods

Participants

This study was conducted in accordance with the Declaration of Helsinki principles (1983) and approved by the institutional review board, and all participants in this study provided informed consent. Researchers recruited full-time IT employees to participate in the study by posting an advertisement on social media (WeChat) with a brief introduction to the study and a link to a 5-minute survey (run by a Chinese online data collection platform wjx.cn). In the advertisement, researchers stated that this study was more interested in IT employees but also open for other occupations. Social media-based snowball sampling can be help-

ful in studying hard-to-reach populations⁴⁶, and many studies have applied this method to studies of professional populations⁴⁷⁻⁵⁰. Participants who were interested could open the link, read the informed consent statement, and complete the survey if they wished to voluntarily participate in the study. The survey was anonymous, and participants could get a 10-RMB (approximately \$1.50) reward through the platform after they completed the survey and passed the quality check (attention detection questions). Attention detection questions were included in the questionnaire⁵¹ (e.g., please select “strongly disagree” from the following options) to exclude participants who were not attentive to the responses, and no participant were screened out in this session. Through snowball sampling, a total of 542 people responded to this study, and 153 of them were excluded from the analysis as they were not IT employees, resulting in a final sample of 389 IT employees. Of these, 42.6% were female, and the participants’ mean age was 27.81 years. Regarding education, 58.6% of the participants had a bachelor’s degree, 16.2% had a college degree, and 25.2% had a master’s degree. Regarding work experience, 37.3% had worked for one to three years, 29.8% for less than one year, 21.6% for three to five years, and 11.3% for more than five years. Approximately 37% were married, 66.0% worked 40 to 50 hours per week, 20.9% worked 50 to 60 hours per week, 8.2% worked less than 40 hours per week, and 4.9% worked more than 60 hours per week.

Measures

Work-Family Conflict

Work-family conflict was measured using the 18-item work-family conflict scale⁵², which consists of two subscales—work interference by family (WFC) and family interference by work (FWC)—with nine items in each subscale. Items such as “My work keeps me from my family activities more than I would like” and “Due to stress at home, I am often preoccupied with family matters at work” were rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

WWB

WWB was measured using a version of the 12-item scale of Lehman and Simpson⁵³ with items such as “Left work early without permission”. All items were scored on a 5-point rating scale ranging from 1 (never) to 5 (very often).

Emotional Exhaustion

Emotional exhaustion was measured with five items de-

rived from the subscale of the Maslach Burnout Inventory developed by Schaufeli *et al.*⁵⁴⁾, an example item was “Work makes me feel like I’m about to break down”, accompanied by responses on a 7-point scale (1=never to 7=every day).

Job Autonomy

The level of job autonomy was assessed using the 9-item Job Autonomy Scale⁵⁵⁾ such as “I am free to choose the method(s) to use in carrying out my work” rated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Control Variables

Gender, age, tenure, and education were considered control variables, as they may be correlated with WWB⁵⁶⁾.

Data Analysis

In this study, we used two statistical software, IBM’s SPSS Statistics 19.0 and Mplus 8.3⁵⁷⁾, for data analysis. SPSS was used to calculate Cronbach’s alpha for each scale to assess the reliability and descriptive statistical analysis.

Since this study mainly used self-reported scales as instruments, it tested for common method variance based on Harman’s single-factor test⁵⁸⁾. In general, when the results of single-factor exploratory factor analysis (EFA) without factor rotation do not exceed 50%, or when the model fit by single-factor validated factor analysis (CFA) does not reach a good fit, it can be considered that there is no serious common method bias. In this study, we used SPSS for EFA analysis by SPSS and Mplus for CFA analysis.

The analysis was divided into three steps using structural equation modeling: 1) Model 1 for mediated effects test, with WFC and FWC as independent variables, emotional depletion as a mediating variable, and WWB as the dependent variable; 2) Model 2 was constructed with WFC and FWC as independent variables, emotional exhaustion as a mediating variable, WWB as the dependent variable, and job autonomy as the moderating variable of emotional exhaustion affecting WWB (without the interaction term of emotional exhaustion and job autonomy); 3) Model 3 was constructed with the interaction term of emotional exhaustion and job autonomy added based on model 2. In the process of model building, we considered all variables except demographic variables as latent variables for analysis and used CFI, TLI, RMSEA, SRMR and other indicators to test the model fit⁵⁹⁾. The moderating effect was analyzed using a latent moderating structural equation model.

Results

Common Method Variance

As this study used self-report scales to measure WFC, FWC, WWB, emotional exhaustion, and job autonomy, there may be common method variance (CMV). Harman’s single-factor method was used to test a single-factor model based on Podsakoff and his colleagues⁷⁵⁸⁾ recommendations for CMV testing. EFA showed that the explanation percentage of the variance of the largest common factor was 38.842%, and the single-factor model fitted poorly, $\chi^2(902)=7530.053$, CFI=0.526, TLI=0.503, RMSEA=0.137, SRMR=0.138. Therefore, we believed that there was no serious CMV in this study.

Considering the unidimensionality of the three kinds of job autonomy, the internal consistency approach was adopted to parcel the items of each subscale. The advantage of using item parceling is that the number of estimated parameters can be reduced. As this study explores the relationship between latent variables instead of the relationship between the items themselves, the application of parceling is acceptable⁶⁰⁾.

Preliminary Analyses

Descriptive statistics, reliabilities, and correlations among the variables were presented in Table 1. After controlling all the control variables, we found that WFC was negatively related with WWB ($\beta=-0.534$, $SE=0.183$, $p<0.001$, 95% CI [-0.747, -0.322]). Thus, H1 was rejected in the opposite direction. Meanwhile, FWC was positive related to WWB ($\beta=0.487$, $SE=0.085$, $p<0.001$, 95% CI [0.321, 0.652]). Therefore, H2 was supported.

Mediation Analyses

The test results for the mediation effect are shown in Table 2, and the path coefficients are shown in Fig. 1. The mediated model (Model 1) was acceptable, $\chi^2(682)=1706.839$, CFI=0.910, TLI=0.903, RMSEA=0.062, SRMR=0.076. The pathway from WFC to WWB through emotional exhaustion ($\beta=0.330$, $SE=0.099$, $p<0.01$, 95% CI [0.136, 0.525]) and pathways from FWC to WWB through emotional exhaustion ($\beta=0.290$, $SE=0.072$, $p<0.001$, 95% CI [0.149, 0.431]) were significant. The traditional analysis of mediating effects was generally based on the presence of a total effect⁶¹⁾. However, recent studies pointed out that the relationship between the independent and dependent variables is not a necessary condition to test for mediating effects. In the case of com-

Table 1. Descriptive statistics and correlations among variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1 Gender ^a	0.42										
2 Age	27.81	4.788	-0.063								
3 Education level ^b	1.09		0.069	-0.108*							
4 Tenure ^c	1.15		-0.063	0.504***	-0.087						
5 WFC	3.434	0.840	0.082	0.176**	0.035	0.214***	(0.923)				
6 FWC	3.231	0.886	0.007	0.229**	-0.119**	0.321***	0.825***	(0.937)			
7 Emotional exhaustion	3.919	1.382	0.014***	0.174***	-0.154***	0.276***	0.661***	0.669***	(0.940)		
8 WWB	2.723	0.923	-0.031	0.210**	-0.204**	0.330***	0.504***	0.688***	0.857***	(0.939)	
9 Job autonomy	5.023	1.043	-0.094	0.082	0.057	0.161**	0.253***	0.233***	0.132*	0.161**	(0.924)

Note. Coefficient reliabilities are on the diagonal. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; WFC: Work-to-family conflict; FWC: Family-to-work conflict; WWB: Work withdrawal behaviors. Coefficient alpha values are presented in italics along the diagonal.

^a0 = male, 1 = female

^b0 = college degree, 1 = Bachelor's degree, 2 = Graduate degree

^c0 = less than 1 year, 1 = 1–3 years, 2 = 3–5 years, 3 = 5–10 years, 4 = more than 10 years

petitive mediation, the indirect effect of the model is the opposite of the direct effect^{62, 63}. Therefore, H3 and H4 were supported. This study considers the results of H3 as a case of competitive mediation.

Moderated Mediation Analyses

We utilized the latent moderated structural equation to examine the moderated mediation hypothesis⁶⁴. The model results indicated that the moderating effect of job autonomy on the relationship between WFC and emotional exhaustion was not significant ($\beta = -0.051$, $SE = 0.306$, $p = 0.868$, 95% CI [-0.650, 0.548]). Job autonomy did not play a moderating role between FWC and emotional exhaustion ($\beta = 0.249$, $SE = 0.259$, $p = 0.336$, 95% CI [-0.258, 0.756]). Thus, H5 and H6 were not supported.

However, job autonomy moderated the relationship between emotional exhaustion and WWB ($\beta = 0.091$, $SE = 0.022$, $p < 0.001$, 95% CI [0.047, 0.134]). Therefore, for simplicity, the model was adjusted to test whether job autonomy plays a moderating role in the effect of emotional exhaustion on WWB. Since the fit of the latent moderated structural equations model cannot be obtained directly from Mplus, we followed the suggestion of Maslowsky and his colleagues to test the model fit⁶⁵, that is, the fit of the moderated effects model is inferred by comparing the improvement in the fit of the model without the addition of the interaction term to the fit of the model with the addition of the interaction term. The model (Model 2) had a good fit before the interaction term was added, $\chi^2(795) = 1942.106$, CFI=0.905, TLI=0.898, RMSEA=0.061, SRMR=0.074. After the interaction term was added (Model 3), the log-likelihood ratio test $D = 25.142$, showed that the addition of interactive items was acceptable⁶⁵. That is, the fit of the model with moderating effects was good.

Job autonomy had no significant influence on WWB

Table 2. Work-family conflict and work withdrawal behavior: An examination of mediating pathways

	Effect size	95% CI
Effects from WFC to WWB		
Total	-0.204	[-0.445, 0.037]
Direct	-0.534**	[-0.747, -0.322]
Indirect	0.330***	[0.136, 0.525]
Effects from FWC to WWB		
Total	0.777***	[0.563, 0.990]
Direct	0.487***	[0.321, 0.652]
Indirect	0.290***	[0.149, 0.431]
Model R ²	0.815***	

Note. ** $p < 0.01$, *** $p < 0.001$; CI: Confidence Interval; WFC: Work-to-family conflict; FWC: Family-to-work conflict; WWB: Work withdrawal behaviors.

($\beta = 0.060$, $SE = 0.034$, $p = 0.075$, 95% CI [-0.006, 0.126]), and the interaction term of job autonomy and emotional exhaustion could significantly positively predict WWB ($\beta = 0.099$, $SE = 0.021$, $p < 0.001$, 95% CI [0.058, 0.140]). For those with a high level of job autonomy (simple slope at +1SD $\beta = 0.652$, $SE = 0.046$, $p < 0.001$, 95% CI [0.472, 0.652]), WWB was more affected by emotional exhaustion than for those with low levels of job autonomy (simple slope at -1SD $\beta = 0.364$, $SE = 0.046$, $p < 0.001$, 95% CI [0.273, 0.455]). Therefore, H7 was unsupported in the opposite direction, with the simple slope test result presented in Fig. 2.

As Hayes⁶⁶ suggested, to test the moderated mediation effect, we found that job autonomy's moderated mediation effect between WFC and WWB was significant ($\beta = 0.065$, $SE = 0.022$, $p < 0.01$, 95% CI [0.021, 0.108]). The moderated mediation effect between FWC and WWB was significant ($\beta = 0.057$, $SE = 0.018$, $p < 0.01$, 95% CI=[0.021, 0.094]).

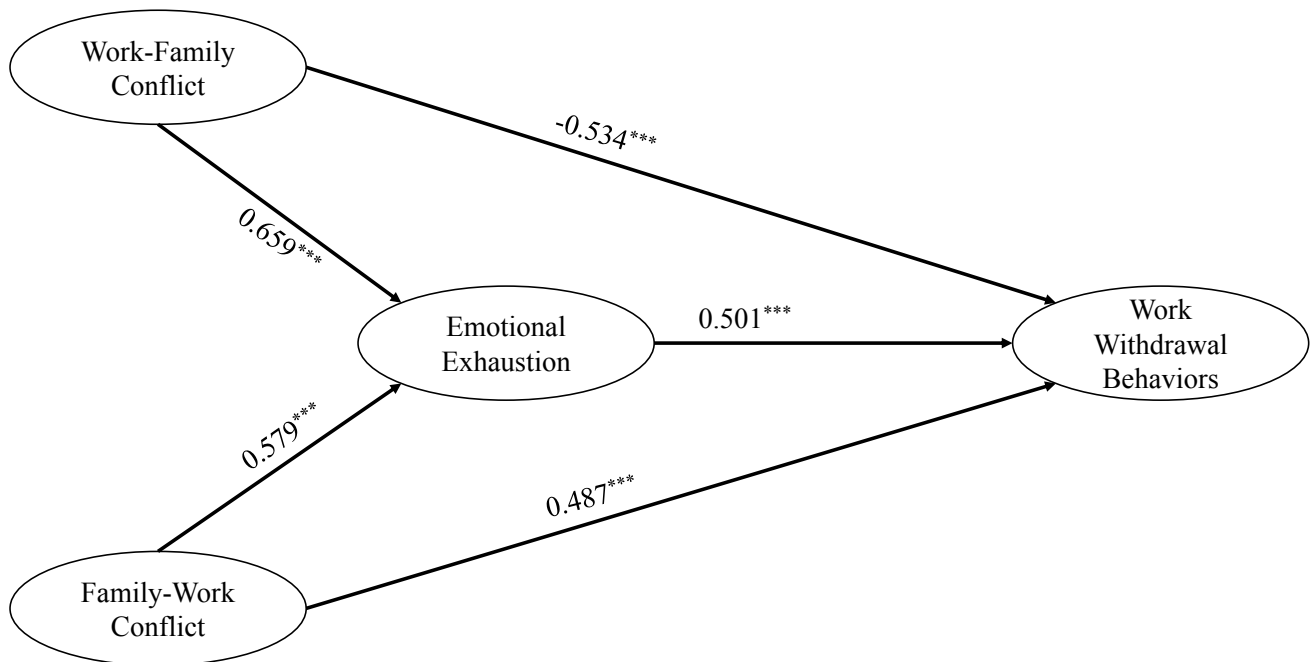


Fig. 1. Unstandardized path coefficient of mediation effect model.
 *** $p < 0.001$

Thus, H8 and H9 were unsupported in the opposite direction. The final model diagram of this study with a summary of each model is shown in Fig. 3 and Table 3.

Discussion

In this study, we explored the relationship between work-family conflict and WWB as well as the mechanism between them. We surprisingly found that WFC and FWC played opposite roles in relating to WWB—that is, WFC negatively related to WWB, whereas FWC positively related to WWB. Moreover, we proved the mediating effect of emotional exhaustion and the moderating effect of job autonomy. However, it was unexpected that job autonomy enhanced the relationship between emotional exhaustion and WWB—that is, the relationship was stronger for employees with higher levels of job autonomy than for those with lower levels of job autonomy. Our study contributed to current literature to some degree in the following ways:

Theoretical Implications

From the JD-R model, excessive job and home demands led to work-family conflict and burnout, resulting in adverse outcomes⁶⁷. Previous scholars have found that FWC were associated with more WWB⁶⁸, and that emotional exhaustion has a positive relationship with withdrawal behaviors^{69, 70}, consistent with our results that emotional exhaus-

tion mediated the relationship between work-family conflict and WWB.

Our study showed some opposite and challenging results to the JD-R model. On the one hand, WFC—resulting from job demand—was negatively related to WWB. Employees who have experienced more WFC was related to less WWB—that is, they behaved better and were more involved in their work—inconsistent with previous findings. One possible explanation could be attributed to Chinese workplace culture, in which sacrificing family time for work is considered an act of dedication that brings long-term benefits⁷¹. In addition, a common conception among Chinese employees is that work should be chosen over family, especially when work is urgent and requires additional time and energy—this may cause employees to exhibit WWB less frequently when facing more WFC. Similar to our results, Yavas and colleagues also observed that while FWC had a detrimental impact on job performance, WFC showed a positive relationship with job performance⁷². Moreover, high job involvement, work centrality and working longer hours on the one hand have been positively associated with work interfering with family⁷³, yet, on the other hand, have also been positively related to career success⁷⁴. That is, WFC represents an employee putting work demands ahead of family demands, which might be a necessary, although implicit, requirement for career success. In addition, it implies that there may be some other

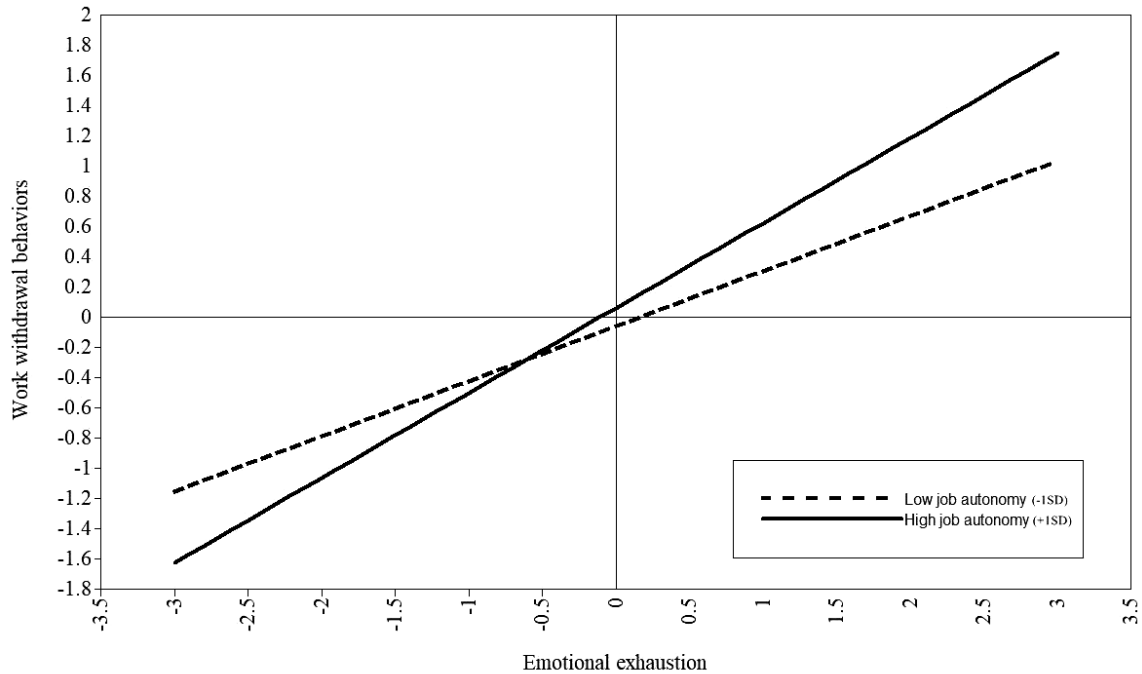


Fig. 2. Simple slope analysis of the moderation effect of emotional exhaustion on WWB by job autonomy.

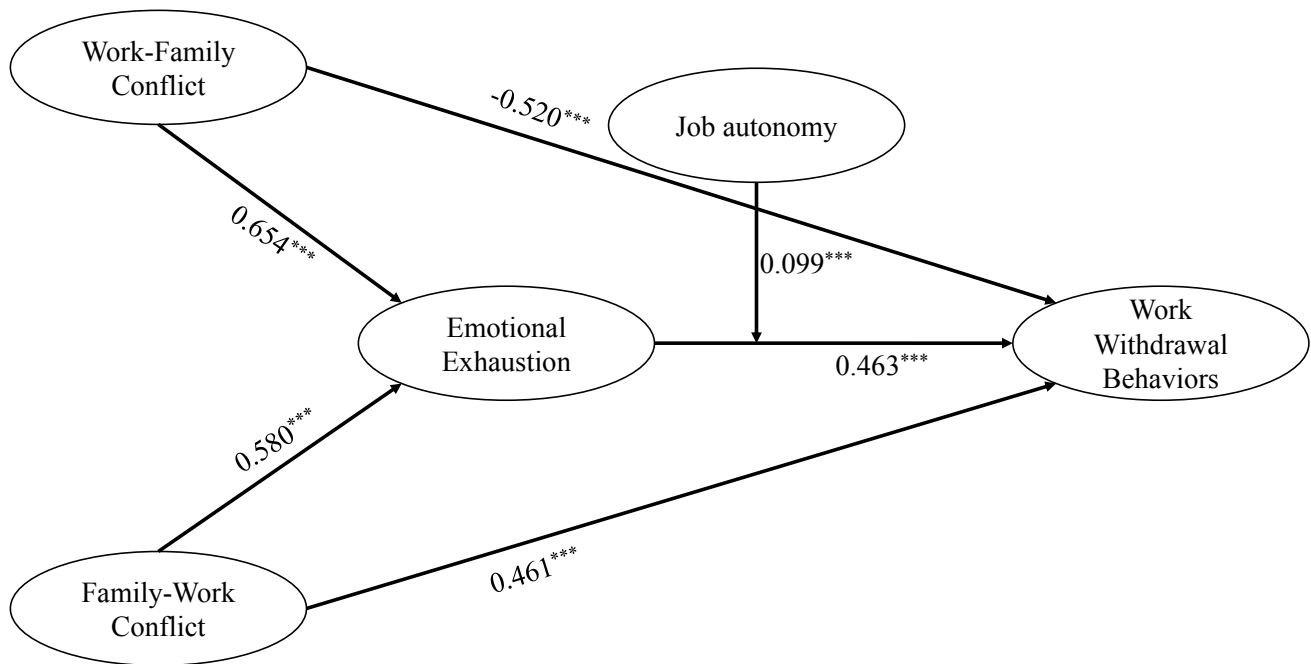


Fig. 3. Schematic of the final model.
 *** $p < 0.001$

factors mediating between WFC and WWB⁶³). For instance, sunk costs influenced by money, energy or time invested⁷⁵) may be predictors of work withdrawal behavior. Work-family conflict is a role conflict that arises from the difficulty of reconciling pressures from the work or family domain⁸), which for WFC may mean that employees invest more time

or energy in the work domain, which is seen as a sunk cost by the employee, which in turn reduces the employee's withdrawal from work.

Last but not least, the cross-sectional design of our study did not permit us to make causal inferences. Therefore, the negative relationship between WFC and WWB might be

Table 3. Summary of the model results of mediation effect and moderated mediation effect

Parameter	Model 1				Model 2				Model 3			
	Emotional exhaustion		WWB		Emotional exhaustion		WWB		Emotional exhaustion		WWB	
	β	(SE)	β	(SE)	β	(SE)	β	(SE)	β	(SE)	β	(SE)
WFC	0.659***	(0.183)	-0.534***	(0.108)	0.649***	(0.180)	-0.541***	(0.108)	0.654***	(0.180)	-0.520***	(0.103)
FWC	0.579***	(0.145)	0.487***	(0.085)	0.584***	(0.144)	0.481***	(0.084)	0.580***	(0.143)	0.461***	(0.080)
Emotional exhaustion	-	-	0.501***	(0.042)	-	-	0.504***	(0.042)	-	-	0.463***	(0.041)
Job autonomy	-	-	-	-	-	-	0.044	(0.034)	-	-	0.060	(0.034)
Emotional exhaustion* Job autonomy	-	-	-	-	-	-	-	-	-	-	0.099***	(0.021)

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; CI: Confidence Interval; WFC: Work-to-family conflict; FWC: Family-to-work conflict; WWB: Work withdrawal behaviors.

opposite, with more WWB leading to reduced WFC. Employees performed more WWB to experience less WFC. For instance, work withdrawal was played a mediating effect between job insecurity and WFC with time-lagged data⁷⁶). However, work withdrawal was positively related to WFC in this study. Therefore, our study revealed that the relationship between WFC and WWB might be complicated, and a future longitudinal study especially with a cross-lagged design is necessary to establish a causal relationship between WFC and WWB.

Although the direct effect between WFC and WWB was found to be negative, we proved the positive indirect effect of emotional exhaustion mediating the relationship between WFC and WWB. However, the opposite direction of direct and indirect effects led to an insignificant total effect in our study. Recent studies have mentioned that the lack of significant total effect can also prove the indirect effect, as there may exist a competitive mediation (opposite direction of direct and indirect effects)^{62, 63}. This suggests that as per the results in the present study, emotional exhaustion plays a competing mediator role in the relationship between WFC and WWB; that is, the relationship between WFC and WWB was negative while WFC increased the employee's WWB through emotional exhaustion, which may reflect the unique relationship of WFC to WWB when other variables such as FWC are also considered. Future studies could test other mechanisms in the integrated models to further examine the relationship between WFC and WWB.

In addition, the opposite moderating role of job autonomy in the relationship between emotional exhaustion and WWB was identified in our study. Specifically, the mediation effect was stronger for employees with higher levels of job autonomy. Some previous studies have also noted the negative aspects of job autonomy. For instance, Fox, Spector⁷⁷) found that interpersonal conflict was more strongly associated with personal counterproductive work behavior when the level of autonomy was high. Moreover, when employees' initial work engagement levels were low, employees' job autonomy and future work engagement were negatively correlated⁷⁸). This may indicate that when job resources are limited, job autonomy might function as a job

demand. This may also indicate that under the construct of employees' emotional exhaustion, job autonomy becomes a burden, which leads to an increase in WWB. These studies showed that job autonomy had negative effects as well as positive effects and thus requires further exploration. Another possible explanation might be that instead of using it to balance work and family or flexibly deal with work-family conflict, our participants treated job autonomy as an opportunity to work more, either actively or passively. In some previous studies among IT employees in other countries, job autonomy was found to be negatively related to exhaustion, work-family conflict, work overload⁷⁹), as well as positively associated with organizational commitment⁸⁰). However, the relationships between job autonomy and emotional exhaustion, WFC, and FWC were all positive in our study. That is, the more autonomy employees had, the more time or energy they might choose to spend on work, leading to more work-family conflict and exhaustion. This phenomenon may be due not only to employees' willingness, but also to the overall massive workload and highly competitive work environment among Chinese IT employees. Nevertheless, the workload could be included as a control variable to better examine the moderate effect of job autonomy and qualitative studies are needed in the future to gain deeper and richer insights into how job autonomy works in these relationships.

Practical Implications

Our results indicate that more attention should be paid to work-family conflict issues of among IT industry employees in mainland China, as they might increase employees' withdrawal behaviors through emotional exhaustion. Previous researchers have also found that emotional exhaustion can damage the well-being of employees⁸¹), and may also increase turnover rates⁸²). Existing research supported that the consequences of WWB may become increasingly serious over time⁸³). Therefore, organizations should make efforts to reduce employees' emotional exhaustion and WWB.

These efforts could include providing employees with training to relieve their stress^{82, 84}) or more support to ease

the impact of work-family conflicts⁸⁵). In addition, it may be helpful for employers to formulate family-friendly policies that are more in line with employees' psychological preferences⁸⁶, and for managers to adopt a more active and friendly management style to reduce employees' work-family conflict, emotional exhaustion and withdrawal behaviors^{87, 88}).

In addition, even though we found that WFC was negatively related to WWB, employers should not ignore WFC that employees experience. Policymakers and managers should be aware that this may adversely affect employees' mental and physical health⁸⁹) and damage employees' performance⁹⁰).

Limitations and Suggestions

There are also some limitations of this study that should be noted. First, the current study utilized a self-report methodology, which was often problematic. However, as we focused on emotional, cognitive, and behavioral responses, we believed that anonymous self-reports were acceptable⁷⁷). Moreover, we examined common method bias and proved that it was not a serious problem in this study.

Second, a cross-sectional research design cannot provide adequate support for the causal relations between variables. Future research may consider using a longitudinal design to examine the causal effect between work-family conflict and WWB.

Third, social media-based snowball sampling was utilized to collect the data. Although this approach provided convenience when recruiting the participants, it resulted in non-random sampling, which might undermine the representativeness and generalization of the results. Future research should consider more randomized approaches, such as random selection of participants in several IT organizations, when collecting data.

Fourth, the participants in our study were young, and 63% were unmarried. To some degree, young unmarried employees may experience less work-family conflict than married employees, which may bias the results of this study. However, the mean value reported in this study was 3.434 (SD=0.840) for WFC and 3.231 (SD=0.886) for FWC, which was close to previous studies⁹¹⁻⁹⁵) using the same work-family conflict scale⁵²), indicating that participants in this study were also bothered by work-family conflict. As Chinese families emphasize filial piety, taking good care of parents is deemed an obligation⁹⁶). Therefore, unmarried IT employees, might also experience work-family conflict related to their parents. Although young employees also experienced problems with work-life bal-

ance—more than three-quarters of participants in this study worked more than 40 hours per week—future research can implement more rigid eligibility principles and focus more on married employees.

Conclusion

In this study, we found that WFC was negatively related to WWB, whereas FWC was positively related to WWB among IT employees in mainland China. Emotional exhaustion played a mediating role, and job autonomy strengthened the relationship between emotional exhaustion and WWB.

Author contributions

Junyan HOU and Shu DA designed the study, and performed the data analysis and wrote the manuscript, so worked as co-first authors. Yuying WEI collected the data. Xichao ZHANG was the supervisor of the research team, and he repeatedly revised the manuscript. All authors contributed to this work and approved the final version of the manuscript to be published.

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