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Quantitative Research Article

Impact of Challenge and Hindrance Demands on Work-Related Burnout: The Mediating Effect of Psychological Empowerment

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Abstract

Background/ problem: Work-related burnout remains a significant concern in the dynamic environment of Chinese technology companies, primarily due to the varying job demands. Understanding the impact of these demands and the potential mitigating role of psychological empowerment is crucial.

Objective/ purpose: This study aimed to examine the direct effects of challenge and hindrance demands on work-related burnout and the direct effect of psychological empowerment on work-related burnout. Additionally, it explored the mediating effect of psychological empowerment in the relationship between challenge and hindrance demands and work-related burnout.

Design and Methodology: Employing a quantitative research design, the study surveyed 442 employees from Chinese technology enterprises using a quota sampling method. Data analysis was performed with PLS-SEM.

Results: The findings indicate a significant positive effect of challenge demands on work-related burnout ($\beta = .43$, $p < .001$) and of hindrance demands on work-related burnout ($\beta = .31$, $p < .001$). Psychological empowerment related negatively to work-related burnout ($\beta = -.34$, $p < .001$). Notably, psychological empowerment significantly mediated the relationship between hindrance demands and burnout (indirect effect = .20, $p < .001$), but not between challenge demands and burnout (indirect effect = -.02, $p = .23$).

Conclusion and Implications: This study highlights the differential effects of job demands on burnout and the pivotal role of psychological empowerment in reducing burnout from hindrance demands. For effective burnout management, organizations should balance job demands, particularly by minimizing hindrance demands, and enhance psychological empowerment through autonomy, meaningful work, and development opportunities. These strategies promise a healthier, more resilient workforce.

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Challenge demands, hindrance demands, work-related burnout, psychological empowerment, Chinese technology enterprises.

In the dynamic landscape of the modern workplace, burnout, which characterized by emotional, mental, and physical fatigue due to prolonged stress, has become a pervasive issue among workers (Mental Health UK, 2024). Data from Deloitte (2018) indicate that a substantial portion of professionals experience heightened stress levels, with 64% reporting frequent stress or frustration at work, and 77% having encountered burnout in their current roles. The technology industry, marked by its fast pace and relentless pressure for innovation, is especially prone to burnout (Hughes, 2022). For instance, In China, a survey highlighted that 55.50% of technology professionals experience burnout, with 13.30% enduring moderate to severe levels, reflecting significant mental health challenges in the tech sector (Fu et al., 2021). This

situation underscores the urgent need for the development of effective management strategies to alleviate work-related burnout and foster a healthier work environment (Yong et al., 2019). Enhancing psychological empowerment stands as a viable strategy for preventing or mitigating burnout within the workforce (Zhou & Chen, 2021).

Psychological empowerment embodies an intrinsic motivational force that stems from an individual's conviction in their ability to impact outcomes and enact positive change within their work setting (Spreitzer, 1995). This empowerment influences burnout by altering employees' perceptions of their workplace, bolstering their self-efficacy, and enhancing their engagement with work (Meng et al., 2015). Individuals who perceive themselves as psychologically empowered tend to find their work more meaningful, perceive challenges as opportunities, and feel rewarded by their endeavors. Consequently, they are less prone to the hallmarks of burnout: emotional exhaustion, cynicism, and a sense of diminished efficacy in their professional roles (Liu et al., 2019).

Job demands represent a critical factor influencing both burnout and psychological empowerment within the workplace (Wu et al., 2020). As defined by Bakker et al. (2023), job demands encompass various aspects of a job that require sustained physical or psychological effort, leading to specific physiological or psychological costs. Generally, job demands contribute positively to burnout by escalating the stress and strain experienced by employees (Demerouti et al., 2001). However, not all job demands exert the same impact on employee well-being and performance. The challenge-hindrance stressor framework (Cavanaugh et al., 2000) differentiates job demands into challenge demands, which offer opportunities for growth and achievement, and hindrance demands, which obstruct personal development. These distinctions are crucial as they influence psychological empowerment differently. Challenge demands are likely to foster psychological empowerment by promoting perceptions of meaningfulness and competence, thereby enhancing employees' sense of self-determination and impact at work (Yang & Li, 2021). In contrast, hindrance demands tend to diminish psychological empowerment by eroding perceived control and autonomy, limiting employees' influence over their work environment (Kim & Beehr, 2018).

Although the link between job demands and burnout has been extensively studied, the specific mediating role of psychological empowerment in this relationship might not have been sufficiently explored (Kim & Beehr, 2018), especially in high-tech environments where job demands are uniquely structured and have a distinct impact. Furthermore, research often overlooks the nuanced differences between challenge and hindrance demands within this context (Li & Li, 2016). This oversight persists despite evidence suggesting that these two types of demands may differently influence the mediating effect of psychological empowerment on burnout. This study aims to fill these gaps by delineating how both types of job demands, through psychological empowerment, contribute to work-related burnout in the high-stress environment of China’s technology sector. The specific research questions include: How do challenge demands and hindrance demands affect burnout? How do they affect psychological empowerment? And how does psychological empowerment mediate the relationship between these job demands and work-related burnout?

Literature Review

This section outlines the core concepts of the study, reviews pertinent literature, and delineates the theoretical foundations underpinning the relationships explored. The hypothesized conceptual model is also proposed.

The Effect of Challenge Demands and Hindrance Demands on Work-related Burnout

Job demands encapsulate the physical, mental, social, or organizational aspects of work that require sustained physical or cognitive effort, thereby incurring specific physiological or psychological costs

(Demerouti et al., 2001). The challenge-hindrance stressor framework (Cavanaugh et al., 2000) further divides job demands into challenge demands and hindrance demands. Challenge demands are seen as difficult yet offering potential opportunities for development, encompassing high work responsibility, task complexity, and time pressures that are manageable within reasonable limits. They are considered "good stressors," eliciting a positive stress response that promotes learning, development, and performance (Cavanaugh et al., 2000). Conversely, hindrance demands represent job aspects that obstruct an individual's ability to achieve personal and professional growth, such as organizational politics, role ambiguity, and unnecessary bureaucratic procedures. These demands are generally associated with psychological and social dimensions and are perceived as stressors that inhibit performance and contribute to outcomes like burnout (Cavanaugh et al., 2000).

Burnout is an occupational phenomenon caused by chronic stress in the workplace, characterized by emotional exhaustion, a sense of detachment, and a decline in personal achievement (Bakker et al., 2023). According to the classification by Kristensen et al. (2005), burnout is divided into personal burnout, work-related burnout, and client-related burnout. Work-related burnout specifically refers to the fatigue and emotional burden directly associated with one's professional life (Kristensen et al., 2005).

The job demands-resources (JD-R) model integrates diverse perspectives on job stress and motivation, positing that job demands deplete employee resources while job resources function to mitigate stress and enhance well-being (Bakker et al., 2023). Challenge demands, while offering opportunities for personal growth and achievement, have been associated with psychological strains such as tension and burnout (Podsakoff et al., 2023). Hindrance demands, on the other hand, act as obstacles to personal growth and are strongly linked to burnout due to their nature of impeding goal accomplishment (Podsakoff et al., 2023). Empirical studies support these assertions, revealing that both challenge and hindrance demands correlate positively with burnout, albeit through slightly different pathways. Challenge demands have been found to relate positively to both burnout and work engagement, suggesting a nuanced effect that includes potential motivational aspects despite the strain (Podsakoff et al., 2023; Wu et al., 2020; Zhang et al., 2020). In contrast, hindrance demands exhibit a straightforward negative impact on work engagement and contribute significantly to burnout (Nair et al., 2020; Podsakoff et al., 2023; Wu et al., 2020). Given these broad findings, the following hypothesis is provided:

Hypothesis 1: Challenge demand has a positive effect on work-related burnout.

Hypothesis 2: Hindrance demand has a positive effect on work-related burnout.

The Effect of Challenge Demands and Hindrance Demands on Psychological Empowerment

Psychological empowerment refers to the psychological state in which individuals feel control and influence within their work context (Spreitzer, 1995). It is not a static personality trait or a simplistic organizational strategy but a dynamic attitude involving active engagement in work tasks. Spreitzer (1995) identified four key dimensions of psychological empowerment: meaning, competence, autonomy, and impact. Meaning pertains to the degree to which an individual's work goals align with their personal beliefs or values. Competence is about an individual's confidence in their ability to execute work tasks effectively. Autonomy refers to the individual's control over their work actions and processes. Impact is the degree to which individuals believe their actions can significantly affect work outcomes.

Challenge-hindrance stressor framework suggests that challenge stressors are positively linked to motivational processes and positive employee attitudes, as they are perceived as opportunities for growth and achievement, thereby enhancing psychological empowerment (Cavanaugh et al., 2000). Such demands encourage employees by indicating that their efforts lead to valuable rewards, thus boosting their motivation and sense of empowerment (Yang & Li, 2021). On the contrary, hindrance stressors are seen as detrimental to employee motivation and empowerment, as efforts to overcome these obstacles are often viewed as

unrewarding and, therefore, demotivating (Cavanaugh et al., 2000; Podsakoff et al., 2023). This perception leads to a reduction in psychological empowerment among employees, as hindrance demands consume their emotional and psychological resources without offering perceived benefits (Baka et al., 2023). Empirical studies align with these theoretical propositions, demonstrating that challenge demands positively influence psychological empowerment by fostering conditions conducive to employee engagement and innovation. Conversely, hindrance demands, such as role ambiguity and conflict, detrimentally impact empowerment by obstructing personal growth and achievement (Kim & Beehr, 2018; Lin & Ling, 2018). Thus, the following hypotheses are offered:

Hypothesis 3: Challenge demand has a positive effect on psychological empowerment.

Hypothesis 4: Hindrance demand has a negative effect on psychological empowerment.

The Effect of Psychological Empowerment on Work-related Burnout

The conservation of resources (COR) theory suggests that individuals are motivated to acquire, maintain, and safeguard their resources (Hobfoll et al., 2018). Psychological empowerment could be regarded as a significant personal resource due to its alignment with the COR theory's definition of resources, emphasizing the enhancement of an individual's ability to positively impact their work environment and conserve resources (Hobfoll et al., 2018). This conceptualization places psychological empowerment alongside other personal resources such as self-esteem and optimism, highlighting its role in facilitating individuals' ability to navigate job demands more effectively (Bakker et al., 2023; Hobfoll et al., 2018). Psychological empowerment, through fostering self-efficacy, meaningfulness, impact, and autonomy, serves as a protective mechanism against the potential negative outcomes of burnout (Tsang et al., 2022). The empirical evidence further supports this. A study conducted by Zhou and Chen (2021) shows that psychological empowerment has a significant negative impact on emotional exhaustion, which is an important dimension of burnout. Another study on the relationship between psychological empowerment, job burnout, and the intention to stay among nurses in mainland China also indicates that psychological empowerment has a significant negative impact on nurses' job burnout. Creating a positive workplace can encourage nurses to work for longer periods and prevent burnout (Meng et al., 2015). Given these characteristics, the following hypothesis is presented:

Hypothesis 5: Psychological empowerment has a negative effect on work-related burnout.

The Mediating Role of Psychological Empowerment

Personal resources allocation theory posits that individuals evaluate the significance of various demands and accordingly distribute their personal resources (Grawitch et al., 2010), with psychological empowerment acting as a key resource influenced by intrinsic motivation (Li et al., 2015). When confronted with challenge demands, perceived as opportunities for advancement, employees tend to invest more psychological resources, enhancing their sense of empowerment and thereby reducing the impact of burnout (Kim & Beehr, 2018). Conversely, facing hindrance demands, which are viewed as barriers to growth (Podsakoff et al., 2023), individuals are likely to report diminished feelings of value in their work and lowered self-efficacy (Oyeleye et al., 2013), such a decline in psychological empowerment can further intensify the progression of burnout (Song et al., 2024). Empirical research supports the mediating function of psychological empowerment between job demands and outcomes. For instance, psychological empowerment has been found to mediate the relationship between job stress and burnout, as well as between role-based stressors and innovative behaviors, underscoring its critical role in navigating occupational challenges (Kim & Beehr, 2018; Song et al., 2024). Therefore, the following hypotheses are formulated:

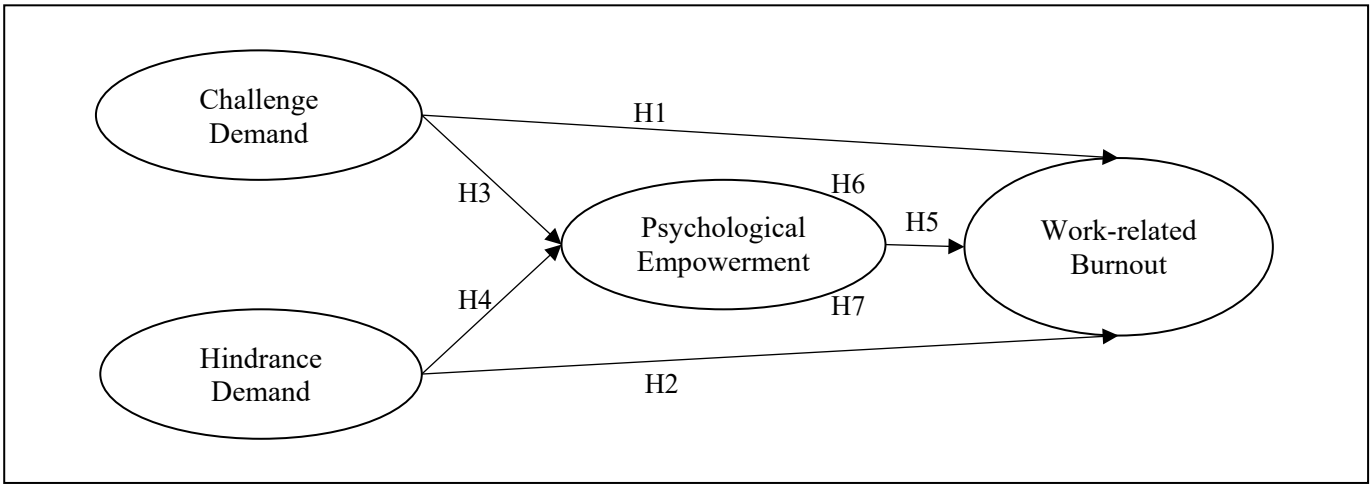
Hypothesis 6: Psychological Empowerment mediates the relationship between Challenge Demand and Work-related burnout.

Hypothesis 7: Psychological Empowerment mediates the relationship between Hindrance Demand and Work-related burnout.

Based on the above hypotheses, a conceptual model was developed (see Figure 1).

Figure 1

Proposed Conceptual Framework



Method

Participants and Procedures

This study examines the interrelationships between job demands, psychological empowerment, and work-related burnout among employees in Beijing's technology sector. Beijing was selected as the research setting due to its prominence as China's technological hub and the observed high rates of growth and burnout within the industry (Fu et al., 2021; Huaxia Times, 2020). According to EPS China Data (2023), there are 22,338 technology companies in Beijing, classified under the software and information technology services sector, employing a total of 411,925 individuals. To ensure representative sampling, a quota sampling method was applied, basing quotas on the distribution of companies and employees across different subcategories within the sector. The sample size was calculated using the Yamane formula (Yamane, 1973), estimating a need for approximately 400 valid responses with a 5% margin of error. The survey was conducted online, facilitated through collaborations with local technology industry associations, resulting in 506 distributed questionnaires and 442 valid responses, achieving an 87% response rate.

Instruments

In this study, data were collected through self-report surveys. A Likert scale was utilized across different constructs. For challenge and hindrance demands, responses were captured on a Likert scale ranging from 1 (no stress) to 7 (a great deal of stress), the constructs of work-related burnout and psychological empowerment were assessed using a Likert scale that ranged from 1 (strongly disagree) to 7 (strongly agree). To ensure cultural relevance and accuracy, all questionnaires—originally in English—were translated into Chinese and then independently back-translated to English. This process involved comparing the back-translated version with the original to resolve any discrepancies (Brislin, 1980), thus preserving the integrity of the survey instruments in the Chinese cultural context.

Work-related Burnout

Work-related burnout is measured using the Copenhagen burnout inventory (CBI) developed by Kristensen et al. (2005), specifically employing the work-related burnout subscale, which consists of seven items, an example item is, "Do you feel worn out at the end of the working day?"

Psychological Empowerment

Psychological empowerment is assessed using Spreitzer's (1995) psychological empowerment scale, which encompasses four dimensions−meaning, competence, self-determination, and impact, each with

three items, totaling twelve items. An example item is "The work I do is very important to me." which assesses the 'meaning' dimension.

Challenge Demands

Challenge Demands is assessed using the scale developed by Cavanaugh et al. (2000), which consists of six items. An example item from this scale is, "How stressful do you find the number of projects and/or assignments you have?".

Hindrance Demands

Hindrance demands is measured also using the scale developed by Cavanaugh et al. (2000), encompassing five items. An example item is, "How stressful do you find the degree to which politics, rather than performance, affects organizational decisions?".

Control Variables

The study incorporated five control variables:

Age: Respondents reported their actual age.

Gender: Coded as a binary variable, with males assigned a value of 0 and females a value of 1.

Marital Status: Also coded as a binary variable; individuals who are unmarried (including never married, widowed, separated, or divorced) were assigned a value of 0, and those married were assigned a value of 1.

Job Position: Categorized into two levels: management positions (such as department managers and supervisors) and non-management positions (such as technical and administrative staff). Management positions were encoded as 1 and non-management as 0.

Firm Size: Classified based on the "Methods of Classification of Large, Medium, Small, and Micro Enterprises in Statistical Terms (2017)" by the National Bureau of Statistics of China (2018). Firms with fewer than 100 staff members were considered micro and small enterprises and encoded as 0; those with 100 or more staff members were categorized as medium and large enterprises and encoded as 1.

Data Analysis

In this study, partial least squares structural equation modeling (PLS-SEM) was selected for two reasons. First, PLS-SEM is particularly suited for exploratory research (Hair et al., 2021), making it ideal for examining the novel aspects of this model. Second, PLS-SEM effectively tests mediating and moderating effects (Sun, 2024), providing a robust analytical framework for assessing the intricate relationships within this proposed model.

Results

Following the analytical steps outlined by Hair et al. (2021), the data analysis unfolds in two steps. The first step assesses the measurement model for reliability and validity, which is essential for ensuring that the constructs accurately reflect the variables they are intended to measure. The second step evaluates the structural model and mediating effects to determine the strength and significance of the hypothesized relationships. Before examining the relationships, a check for common method bias ensured data integrity due to the survey's self-reported nature.

Characteristics of the Respondents

The sample provides a diverse overview of the workforce in this sector. The age distribution of the participants indicates a young demographic, with 57.47% aged 21–30 years and 34.16% aged 31–40 years, highlighting the youthful nature of the tech industry. Individuals aged 41–50 years and approximately 50 years represent 5.88% and 2.49%, respectively, suggesting a lesser representation of older employees. In terms of gender, the sample shows a higher prevalence of female employees, constituting 58.82%, compared to male employees, who make up 41.18%. Marital status among the participants is evenly split,

with 49.32% unmarried and 50.68% married. Regarding job positions, the majority of respondents (66.97%) are ordinary employees, while 33.03% hold management roles. Table 1 presents the descriptive characteristics of the sample.

Table 1

Demographic Characteristics of Respondents

Characteristics	Descriptive statistics		
	Category	Frequency	Percentage
Age in years	21 – 30	254	57.47%
	31 – 40	151	34.16%
	41 – 50	26	5.88%
	> 51	11	2.49%
Gender	Male	182	41.18%
	Female	260	58.82%
Marital Status	Unmarried	218	49.32%
	Married	224	50.68%
Job Position	Ordinary employees	296	66.97%
	Management	146	33.03%
Firm Size	Micro and small enterprises	152	34.39%
	Medium and large enterprises	290	65.61%

Measurement Model Analysis

The measurement model analysis assessed Cronbach's alpha (α) and composite reliability (CR) to confirm internal consistency, while average variance extracted (AVE) was examined to verify convergent validity. Indicator reliability was ensured by analyzing the loading values of individual items. The results in Table 2 demonstrated that all constructs met the established criteria for a robust measurement model. Loadings for all items exceeded the .70 threshold, indicating strong indicator reliability (Hair et al., 2021). Cronbach's alpha and CR values for each construct were well above the acceptable limit of .70, confirming internal consistency (Hair et al., 2021). AVE values for all constructs surpassed the .50 standard, affirming convergent validity, which suggests that the majority of the variance in items is explained by their respective constructs (Hair et al., 2021).

Discriminant validity was rigorously evaluated through three methods: cross-loadings, the Fornell-Larcker criterion, and the Heterotrait-Monotrait (HTMT) ratio (Hair et al., 2021). Cross-loadings analysis indicated that items loaded highest on their respective constructs, according to Table 3, the Fornell-Larcker criterion demonstrated that the square roots of AVEs were greater than the inter–construct correlations, and HTMT ratios were below the .85 cutoff. These findings collectively indicate that the measurement model exhibits strong discriminant validity, meeting the standards for distinguishing between constructs within the model (Hair et al., 2021).

Common Method Bias (CMB) Assessment and Multicollinearity

To address the potential issue of common method bias (CMB) and assess multicollinearity within the study, two distinct methodologies were employed. Initially, Harman's one-factor test was utilized, wherein principal components analysis was conducted to identify the number of factors that emerge without rotation (Podsakoff et al., 2003; Simmering et al., 2015). This analysis revealed the extraction of four main components, with the largest factor accounting for 36.77% of the variance. This result suggests that CMB is not a significant concern in this dataset, as no single factor dominates the variance explained. Subsequently, a marker variable technique was applied as an additional measure to assess CMB (Simmering et al., 2015). This method involves the inclusion of a variable theoretically unrelated to the variables of interest within the model. The analysis of path coefficients associated with this marker variable indicated that they were all non-significant (Simmering et al., 2015), further supporting the conclusion that CMB does not pose a substantial issue in this study's data.

Table 2
Construct Reliability, Validity, and Factor Loadings

Variables	α	CR	AVE	Items	Loading
Psychological Empowerment	.87	.91	.72		
PE_1	.86	.91	.78	Item1	.90
				Item2	.88
				Item3	.87
PE_2	.84	.90	.76	Item4	.84
				Item5	.88
				Item6	.89
PE_3	.81	.89	.73	Item7	.86
				Item8	.86
				Item9	.84
PE_4	.84	.90	.76	Item10	.87
				Item11	.87
				Item12	.87
Challenge Demand	.90	.92	.66	Item1	.84
				Item2	.81
				Item3	.79
				Item4	.82
				Item5	.81
				Item6	.79
Hindrance Demand	.91	.93	.73	Item1	.89
				Item2	.85
				Item3	.84
				Item4	.86
				Item5	.84
Work-related Burnout*	.92	.94	.71	Item1	.89
				Item2	.85
				Item3	.83
				Item5	.83
				Item6	.84
				Item7	.83

Note. PE_1 = Meaning, PE_2 = Competence, PE_3 = Self-determination, PE_4 = Impact, α = Cronbach's alpha, CR = Composite Reliability and AVE = Average Variance Extracted. Variable marked with * had a item with loadings below .5 removed; the table presents the reliability data after the deletions.

Table 3
Correlation among Variables

Constructs	WB	CD	HD	PE1	PE2	PE3	PE4
WB	.85						
CD	.49 (.54)	.81					
HD	.57 (.63)	.14 (.16)	.85				
PE1	-.46 (.52)	-.02 (.06)	-.49 (.55)	.88			
PE2	-.42 (.47)	.01(.04)	-.47 (.54)	.61 (.72)	.87		
PE3	-.46 (.53)	-.07 (.09)	-.49 (.58)	.64 (.77)	.59 (.72)	.85	
PE4	-.46 (.52)	-.01 (.05)	-.50 (.57)	.66 (.78)	.65 (.77)	.64 (.78)	.87

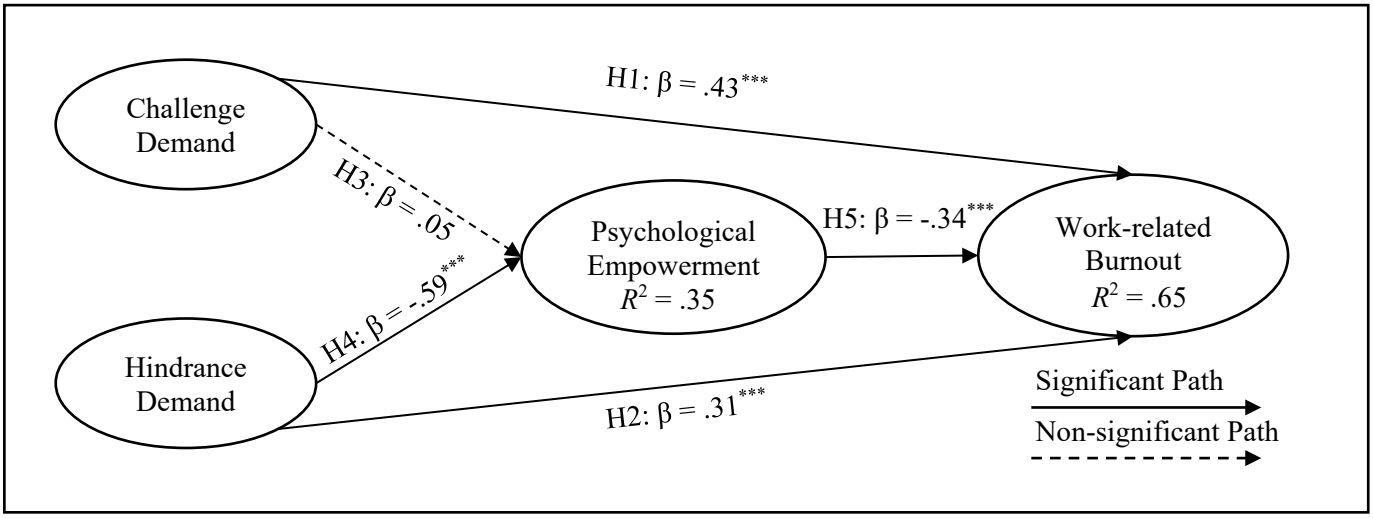
Note. PE1 = Meaning, PE2 = Competence, PE3 = Self-determination, PE4 = Impact, CD = Challenge Demands, HD = Hindrance Demands, WB = Work-related Burnout; square root of AVE is presented in diagonal; value within bracket is the value of HTMT ratio.

Structural Model Analysis

Structural model analysis was conducted by utilizing the PLS algorithm with bootstrapping of 5000 samples and blindfolding. As Figure 2 illustrates, the analysis revealed significant path coefficients for challenge demands to burnout (β = .43, $p < .001$) and hindrance demands to burnout (β = .31, $p < .001$), indicating both types of job demands positively influence work-related burnout. Conversely, the path from challenge demands to psychological empowerment was not significant (β = .05, $p = .23$), suggesting challenge demands do not significantly affect psychological empowerment. However, hindrance demands negatively impacts psychological empowerment significantly (β = -.59, $p < .001$), highlighting the detrimental effect of hindrance demands on employees' sense of empowerment. Additionally, psychological empowerment was found to significantly negatively influence burnout (β = -.34, $p < .001$), indicating that higher levels of psychological empowerment are associated with lower levels of work-related burnout.

Figure 2

The Results of The Structural Model



Note. *** $p < .001$.

The model's explanatory power, as measured by the coefficient of determination (R^2), was substantial for burnout (R^2 = .65) and moderate for psychological empowerment (R^2 = .35), demonstrating the model's capability to explain a significant portion of the variance in these constructs. The effect sizes (f^2) further supported the significance of the relationships, with notable effects of challenge demands on burnout (f^2 = .50) and hindrance demands on psychological empowerment (f^2 = .51), among others. Predictive relevance (Q^2) values of .46 for burnout and .24 for psychological empowerment indicate the model's predictive accuracy for these outcomes, suggesting that the model has sufficient predictive power.

Mediating Effects

The study investigated the mediating effects by employing bootstrapping with 5000 samples for statistical rigor. For the pathway from challenge demands to work-related burnout through psychological empowerment, the analysis showed a significant direct effect (β = .43, $p < .001$) and no significant indirect effect (β = -.02, $p = .23$), indicating a strong direct-only non-mediation effect of challenge demands on work-related burnout (Hair et al., 2021). Conversely, the pathway from hindrance demands to work-related burnout through psychological empowerment demonstrated a significant direct effect (β = .31, $p < .001$) and a significant indirect effect (β = .20, $p < .001$), indicating complementary mediation (Hair et al., 2021). Table 3 shows the mediating effects on the structural model paths.

Table 3
Mediating Effects on the Structural Model Paths

Path	Effects	Estimate	Bootstrap 5000 Times			Percentile 95%		Conclusion
			SD	*t*	*p*-value	Low	Upper	
CD → PE → WB	Direct	.43	.03	14.10	< .001	.37	.49	Direct-only non-mediation
	Indirect	-.02	.01	1.20	.23	-.05	.01	
	Total	.41	.03	12.54	< .001	.35	.47	
HD → PE → WB	Direct	.31	.03	9.24	< .001	.25	.38	Complementary mediation
	Indirect	.20	.02	8.53	< .001	.16	.25	
	Total	.51	.03	17.72	< .001	.46	.57	

Note. CD = Challenge Demands, HD = Hindrance Demands, WB = Work-related Burnout, and PE = Psychological Empowerment.

Discussion and Conclusion

Discussion of Main Results

The results suggest that challenge demands and hindrance demands positively link with burnout, which is consistent with previous research (Li et al., 2017). And these findings extend the job demand-resource (JD–R) model, which holds that job demands deplete employee resources and lead to burnout (Bakker et al., 2023), and this study confirms that even when job demands differ, both hindrance and challenge demands lead to an increase in burnout. These findings highlight the dual nature of job demands, while challenge demands can stimulate motivation, their excessive presence may still induce burnout (Zhang et al., 2020), necessitating a balanced approach to workload management. In contrast, hindrance demands are shown to unambiguously exacerbate burnout (Nair et al., 2020), pointing towards the importance of minimizing such stressors through organizational strategies.

The relationship between job demands and psychological empowerment reveals complex dynamics. The study found a significant negative impact of hindrance demands on psychological empowerment, illustrating that such demands deplete employees' motivational and emotional resources, thereby reducing their sense of control and influence in the workplace. This is consistent with previous research indicating that obstacles to personal growth and goal achievement directly undermine empowerment (Lin & Ling, 2018). Conversely, the expected positive relationship between challenge demands and psychological empowerment was not confirmed, suggesting a nuanced interplay that extends beyond traditional understanding. This discrepancy might be explained by variations in how individuals assess the value of challenges, with factors such as emotional intelligence and personality traits influencing their appraisal processes (Kilby et al., 2018). Furthermore, Challenge demands' impact on psychological empowerment is complex, as they offer growth opportunities but also require significant effort, leading to varied individual responses based on their perception, resilience, and available resources (Podsakoff et al., 2023). Unlike the straightforward negative effects of hindrance demands, challenge demands do not consistently result in positive outcomes (Podsakoff et al., 2023). Meta-analyses have shown that while hindrance stressors have a clear negative effect, the role of challenge stressors in employee outcomes is not as direct, further complicating their relationship with psychological empowerment (Webster & Adams, 2020).

The study's empirical evidence substantiates the assertion that psychological empowerment inversely correlates with work-related burnout, underscoring the critical function of psychological empowerment in buffering against burnout's negative consequences. Psychological empowerment, through its facets of meaning, competence, self-determination, and impact, plays a pivotal role in creating a work environment that bolsters employees' sense of value, mastery, and autonomy over their work (Spreitzer, 1995). This environment, in turn, equips employees to better manage work demands, thereby diminishing the risk of emotional exhaustion and burnout (Tsang et al., 2022).

The investigation into the mediating role of psychological empowerment between job demands and work-related burnout offers insightful distinctions. For the pathway from challenge demands to work-related burnout, the mediation by psychological empowerment was not confirmed, suggesting that the influence of challenge demands on burnout does not significantly pass through psychological empowerment. This outcome implies that while challenge demands are recognized for their potential to foster growth and engagement, they may not uniformly enhance psychological empowerment or reduce burnout through empowerment mechanisms. This absence of mediation might be attributed to individual variations in perceiving and responding to challenge demands (Kilby et al., 2018), indicating that the translation of challenge into empowerment and subsequent burnout reduction might involve additional factors not examined in this study. Conversely, the pathway from hindrance demands to work-related burnout through psychological empowerment found substantial support, highlighting the significant mediating role of psychological empowerment. This finding reflects how hindrance demands significantly deplete employees' psychological resources, diminishing their empowerment and leading to increased burnout, which aligns with the conservation of resources (COR) theory emphasizing that stress occurs when there is a threat to these resources or a loss of them (Hobfoll et al., 2018). This relationship underscores the negative impact of hindrance demands on employee well-being and the protective role of psychological empowerment against burnout, aligning with literature that views hindrance stressors as detrimental to motivational and emotional resources (Kim & Beehr, 2018; Lin & Ling, 2018).

This study introduces key findings: first, it confirms the significant mediating role of psychological empowerment between hindrance demands and burnout, with increased hindrance demands significantly reducing empowerment and escalating burnout. This underscores the importance of reducing hindrance demands and enhancing empowerment to effectively manage burnout. Second, it challenges the traditional view that challenge demands uniformly enhance psychological empowerment to mitigate burnout. Instead, this relationship varies, suggesting that challenge demands may not consistently lead to positive outcomes, highlighting the need for further research to explore how job demands influence burnout through other resource mechanisms.

Limitations and Future Research Direction

Despite its contributions, the study also has some limitations. Firstly, the cross-sectional design, while establishing correlations among the variables, leaves the directionality of these relationships over time unclear. Secondly, the unique pressures and work environments of the Chinese technology industry may not fully represent the dynamics of other industries or geographical regions, potentially limiting the generalizability of the findings. In response to these limitations, it is recommended that future research employ longitudinal designs to better understand the causal relationships and temporal evolution between job demands, psychological empowerment, and work-related burnout. Additionally, expanding the research to different cultural contexts and industries would help understand how various work environments and cultural values impact the relationships among job demands, psychological empowerment, and burnout. Additionally, while this study primarily employed quantitative methods, the inclusion of qualitative data through expert interviews could provide deeper insights into the nuances of psychological empowerment and burnout, further enriching the findings. Future research should consider integrating qualitative approaches to validate and expand upon the quantitative results.

Implications for Behavioral Science

This research enriches the behavioral science literature by applying the JD-R model and COR theory to explore the dynamics of job demands, psychological empowerment, and work-related burnout. Firstly, the findings corroborate the JD-R Model by demonstrating that both challenge and hindrance demands can exhaust employees' resources, leading to burnout (Podsakoff et al., 2023). This supports the notion that not only do hindrance demands deplete resources and contribute to burnout, but challenge demands also, despite their potential benefits, can impose significant stress that might not always be offset by their motivational effects (Nair et al., 2020). Secondly, this study underscores the importance of psychological

empowerment, a key personal resource within the COR framework, in mitigating the effects of resource loss due to job demands. While the expected mediating role of psychological empowerment between challenge demands and burnout was not found, its significant mediation between hindrance demands and burnout highlights how empowerment can protect against resource depletion (Zhou & Chen, 2021). The differential impacts of challenge versus hindrance demands found in this study suggest that interventions should be tailored to the type of demand. Organizations should focus on optimizing challenge demands to leverage their motivational potential while mitigating their stressful aspects, in line with the JD-R model. For hindrance demands, strategies should be aimed at eliminating or reducing these demands to prevent unnecessary resource loss, consistent with the principles of the COR theory.

Conclusion

This study investigated the relationships among job demands (including challenge and hindrance demands), psychological empowerment, and work-related burnout. The results indicate that both challenge and hindrance demands are positively correlated with work-related burnout, whereas psychological empowerment is negatively correlated with burnout. Moreover, psychological empowerment plays a significant mediating role between hindrance demands and work-related burnout. This study strengthens the theoretical framework regarding the impact of job demands on work-related burnout and further confirms the importance of psychological empowerment in alleviating burnout. This paper provides valuable insights and recommendations for future research directions and management practices.

Declarations

Conflicts of Interest: The authors declare no conflicts of interest.

Ethical Approval Statement*:* The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of the National Institute of Development Administration, Thailand (protocol code ECNIDA 2023/0174 and date of approval 13 December 2023)

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