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Teacher Work Stressors and Professional Attitudes: A Moderated Mediation Model of Work-Related Strain and School Climate from the Perspective of Conservation of Resources Theory

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Abstract

Based on Conservation of Resources Theory, this study explored the relationship between Chinese teachers' work stressors and professional attitudes, examining Work-Related Strain's mediating role and school climate's moderating effects. Using OECD TALIS 2018 data from 3,088 Chinese teachers, confirmatory factor analysis tested scale validity, PROCESS macro examined mediation and moderation effects, and bias-corrected Bootstrap assessed significance. Results showed work stressors significantly negatively impacted professional attitudes. Work-Related Strain significantly mediated this relationship, with indirect effects accounting for 66.9% of total effects. School climate demonstrated differentiated moderating effects: buffering the transformation of work stressors into Work-Related Strain while amplifying direct negative impacts on professional attitudes. These findings reveal complex psychological mechanisms underlying teacher professional attitude changes, with Work-Related Strain as a key mediating variable. The dual moderating effects challenge traditional buffering assumptions, providing new insights for understanding organizational contextual factors and offering guidance for optimizing teacher work environments.

1. Introduction

Teacher professional attitude deterioration has become a global educational problem (García-Carmona et al., 2019; Madigan & Kim, 2021), and China is no exception. Recent research shows that teacher burnout problems have become increasingly serious after the COVID-19 pandemic, with a global teacher burnout prevalence rate as high as 52% (Ozamiz-Etxebarria et al., 2023). Among US K-12 teachers, 44% report frequently feeling work burnout, ranking first among all industries (Marken & Agrawal, 2022). The 2023 RAND survey showed that 23% of teachers plan to leave at the end of the school year, with work stress, salary dissatisfaction, and working hours being the main reasons (Doan et al., 2023). In the Chinese educational context, teachers face increasingly diversified and complex work stressors, including excessive teaching loads, complicated administrative work, difficulties in student behavior management, and increased accountability pressure (Wang et al., 2020). The negative transformation of teacher professional attitudes not only damages educational quality but also exacerbates teacher attrition problems, threatening the sustainable development of educational systems.

To effectively improve teachers' professional attitudes, scholars have explored individual-level factors (such as self-efficacy (Klassen & Chiu, 2010), coping strategies (Woods et al., 2023), and emotion regulation (Cavioni et al., 2024)), interpersonal-level factors (such as colleague support (Collie et al., 2018), teacher-student relationships (Spilt et al., 2011), and leadership support (Ford et al., 2019)), work-level factors (such as workload (Skaalvik & Skaalvik, 2014), role conflict (Mérida-López & Extremera, 2017), and working conditions (Sims, 2020)), and organizational-level factors (such as school climate (Thapa et al., 2013; Zhang et al., 2023), organizational support (Li et al., 2025), and school culture (Cohen et al., 2009)) affecting teacher professional attitudes. Recent research has further found that the relationship between school climate and teacher well-being presents complex multi-level interactions (Granziera et al., 2022; Yang et al., 2024), with the satisfaction of teachers' basic psychological needs playing an important mediating role in this relationship.

Despite these findings, the impact mechanisms of work stressors on teacher professional attitudes have not received sufficient attention. Work stressors are often considered key factors affecting teacher professional attitudes (Ouellette et al., 2018; Woods et al., 2023). According to Conservation of Resources (COR) theory, increased stressors in the work environment may largely lead to deterioration of teacher professional attitudes.

Current educational reform and accountability system implementation has placed teachers under unprecedented work stressors (Ryan & Deci, 2020; Singh & Gautam, 2024), including heavy teaching tasks, complex administrative work, strict performance evaluations, and diverse role expectations. A 2022 systematic review found that the

complexity of teacher work stressors was further exacerbated after the COVID-19 pandemic, with student behavior management becoming the primary stressor reported by 44% of teachers (NEA, 2024). Under these circumstances, teachers are forced to cope with multiple stressor challenges and bear workloads beyond their resource capacity. This continuous resource consumption mechanism leads teachers to feel physically and mentally exhausted, with work-related tension levels continuously rising (Hobfoll & Shirom, 2000), causing them to develop negative professional experiences such as job dissatisfaction (Woods et al., 2023) and professional identity crises (Viac & Fraser, 2020), ultimately leading teachers to develop negative attitudes toward their profession due to continuous stress and frustration.

Furthermore, teachers, as knowledge workers with professional autonomy, may adjust their professional attitudes to cope with work stress impacts. Changes in professional attitudes can be viewed both as passive adaptation to external pressure and as proactive defensive strategies teachers adopt to maintain their psychological resources.

Meanwhile, from the resource acquisition perspective of Conservation of Resources theory (Hobfoll, 2011), schools provide resources such as emotional support, professional development opportunities, and collegial relationships by creating positive organizational climates to promote teachers' positive cognition and emotional attachment to the work environment, thereby fostering positive interactions between teachers and schools. Recent research confirms that positive school climate can predict teachers' teaching enjoyment and psychological well-being (Zhang et al., 2023) and plays a protective role by satisfying teachers' basic psychological needs (Granziera et al., 2024). However, the nature of this relationship may be more complex than simple resource compensation: on one hand, good school climate may alleviate the negative effects of work stress by providing supportive resources; on the other hand, positive organizational environments may also raise teachers' expectation levels, making them more sensitive to work stress.

Therefore, from the perspective of Conservation of Resources theory, Work-Related Strain and school climate play key roles in the relationship between work stressors and teacher professional attitudes. Work-Related Strain, as a psychological representation of resource depletion, may play an important mediating role in the transformation process from work stressors to professional attitudes. Meanwhile, school climate, as an important contextual resource, may moderate the degree of impact of work stressors on Work-Related Strain, as well as the strength of Work-Related Strain's effect on professional attitudes. However, the specific manifestations and boundary conditions of this moderated mediation mechanism in Chinese teacher populations still need in-depth exploration.

2. Literature Review and Hypotheses

2.1 Conservation of Resources Theory

Conservation of Resources Theory (COR) was proposed by Hobfoll (1989) as an important theoretical framework for understanding individual stress responses and adaptation processes. The core assumption of this theory is that humans have an innate motivation to acquire, maintain, nurture, and protect their valued resources. When these valuable resources face threats, actual losses, or fail to receive reasonable returns after investment, individuals experience stress (Hobfoll, 2001). Unlike traditional stress theories based on individual cognitive appraisal, COR theory emphasizes the decisive role of objective attributes and cultural construction characteristics of resources in the stress generation process.

COR theory is built on two basic principles. First is the "primacy of resource loss principle," which states that resource loss has more intense and lasting psychological effects than resource gain, both in degree and speed of impact (Hobfoll, 2011). This principle echoes Kahneman and Tversky's (1979) prospect theory, reflecting the loss aversion

tendency in human cognition. Second is the ”resource investment principle,” where individuals must invest existing resources to prevent resource loss, recover from losses, and acquire new resources. When individuals lack sufficient resource reserves, they easily fall into a ”loss spiral,” where initial resource loss leads to decreased coping ability, subsequently triggering more resource losses (Hobfoll & Shirom, 2000).

In organizational contexts, COR theory provides an important analytical framework for understanding work stress and employee well-being. Resources can be divided into four categories: material resources (such as housing, equipment), condition resources (such as job stability, good interpersonal relationships), personal characteristic resources (such as self-efficacy, optimism), and energy resources (such as time, energy, knowledge) (Hobfoll, 2002). These resources aggregate and transmit through ”Resource Caravans,” meaning resources often exist and function in combinations, with changes in single resources producing chain effects (Chen et al., 2015).

In recent years, the application of COR theory in education has received increasing attention. Teachers, as knowledge workers, need to invest substantial cognitive, emotional, and social resources to cope with complex teaching tasks and work challenges. When stressors in the work environment exceed teachers’ available resource capacity, resource depletion processes are triggered, subsequently affecting their work performance and professional attitudes (Halbesleben et al., 2014). Meanwhile, schools, as important organizational contexts, can mitigate the negative effects of resource loss by providing supportive resources, or promote resource acquisition and accumulation by creating positive work environments. Therefore, exploring the relationship between teacher work stressors and professional attitudes based on COR theory, as well as the moderating role of school climate, has important theoretical value and practical significance.

2.2 Chinese Teacher Work Stress in the Context of Educational Involution

Against the backdrop of increasingly intensified educational “involution” trends in China, teachers face unprecedented work stress challenges. Educational involution phenomena reflect the dual overlay of educational resource scarcity and social competition intensity, leading to continuously increased teacher workloads and rising professional expectations (Zhang et al., 2023). Current Chinese teachers’ work stressors are mainly manifested at multiple levels: first is the sharp increase in teaching loads, including intensive class scheduling, heavy teaching content, and complex handling of student individual differences (Wang & Li, 2022); second is the excessive expansion of administrative tasks, where teachers need to undertake substantial non-teaching work such as data entry, report writing, and responding to various inspections (Liu et al., 2021); third is the continuous intensification of performance accountability pressure, where teachers are responsible not only for students’ academic performance but also for multiple pressures from parental expectations, social evaluations, and policy requirements (Chen & Zhou, 2020).

Additionally, Chinese teachers face unique cultural and institutional stressors. Under the collectivist cultural background, teachers often bear social responsibilities and moral expectations beyond their professional roles (Li et al., 2019). Meanwhile, structural problems such as unbalanced urban-rural educational resources, limited teacher professional development opportunities, and relatively low salary compensation further exacerbate teachers’ work stress (Yang & Zhang, 2021). After the COVID-19 pandemic, the integration of online teaching with traditional teaching models has brought new technological adaptation pressures and work mode transformation challenges for teachers (Huang et al., 2022). These diversified, compound work stressors continuously consume teachers’ psychological resources, profoundly affecting their professional attitudes and work engagement.

2.3 Research Hypotheses

2.3.1 Work Stressors and Teacher Professional Attitudes

According to Conservation of Resources theory, work stressors, as environmental factors that threaten or consume individual resources, have direct and significant negative effects on teachers' professional attitudes. Substantial empirical research confirms this theoretical expectation. Madigan and Kim's (2021) meta-analysis found significant positive correlations between work stressors and teacher burnout and turnover intention, while showing significant negative correlations with job satisfaction and professional commitment. Specifically, stressors such as excessive teaching loads and complex administrative work directly weaken teachers' positive cognition and emotional attachment to their profession.

Recent research has further revealed differentiated effects of different types of work stressors on professional attitudes. Woods et al. (2023) found that role conflict and work overload are the strongest predictors of decreased teacher job satisfaction, while student behavior management difficulties mainly affect teachers' sense of professional identity. Skaalvik and Skaalvik's (2020) longitudinal study showed that continuous work stress gradually erodes teachers' professional self-efficacy, subsequently leading to comprehensive deterioration of professional attitudes. Additionally, García-Carmona et al. (2019) found through cross-cultural comparison that the negative effects of work stressors on teacher professional attitudes show consistency across different educational systems, but the degree of impact varies culturally.

From the perspective of resource depletion, work stressors force teachers to reassess professional value and person-environment fit by consuming their psychological, emotional, and cognitive resources (Bakker & de Vries, 2021). When teachers perceive that work demands exceed their available resources, they develop professional burnout and turnover intentions (Pressley, 2021). Johnson et al.'s (2019) research further confirmed that work stressors not only directly affect teachers' immediate professional experiences but also have lasting negative effects on their long-term career development trajectories.

Based on the above theoretical analysis and empirical evidence, this study proposes:

H1: Work stressors are significantly negatively correlated with teacher professional attitudes.

2.3.2 The Mediating Effect of Work-Related Strain

When individuals face resource threats or losses, they generate psychological tension reactions, which further influence their subsequent cognitive evaluations and behavioral choices. Work-Related Strain, as teachers' direct psychological response when facing work stressors, reflects the negative emotional experiences and physiological arousal states in the process of individual resource consumption.

With the deepening development of work stress research, scholars increasingly focus on the mediating transmission function of Work-Related Strain and its impact mechanisms. Hobfoll et al. (2018) emphasized that Work-Related Strain is a deep psychological reaction state when individuals conflict with various aspects of the work environment (including task demands, interpersonal relationships, and organizational expectations). Similarly, Bakker and Demerouti (2017) consider Work-Related Strain as a form of employee psychological experience where individuals gradually become alienated from their work engagement and professional identity. Therefore, Work-Related Strain refers to the tension and maladjustment state between teachers and their work responsibilities and professional environment.

According to Conservation of Resources theory, when teachers' available resources decrease during work processes, they are more likely to view work stress as "threatening," leading to the generation of Work-Related Strain. Teachers'

professional experiences transform from positive and engaged states to negative and alienated reactions, cultivating negative emotions of helplessness, exhaustion, and burnout. Therefore, teachers may develop resistance to the work environment and show deterioration in professional attitudes.

Research shows that teachers under high work stress face multiple task demands and experience challenges of insufficient coping resources (Madigan & Kim, 2021). Facing continuous resource consumption, teachers may experience high tension, physical and mental exhaustion, and Work-Related Strain (Skaalvik & Skaalvik, 2020), subsequently affecting their professional attitudes and work engagement levels. Further research found that Work-Related Strain plays an important mediating transmission role between work stressors and professional outcome variables (Collie et al., 2020; Halbesleben, 2020). García-Carmona et al.'s (2019) research confirmed that teachers' emotional exhaustion plays a partial mediating effect in the relationship between work demands and turnover intention.

Based on the above analysis, the following hypotheses are proposed:

H2: Work stressors are significantly positively correlated with Work-Related Strain.

H3: Work-Related Strain is significantly negatively correlated with teacher professional attitudes.

H4: Work-Related Strain mediates the relationship between work stressors and teacher professional attitudes.

2.3.3 The Moderating Effect of School Climate

School climate refers to teachers' overall perception of school organizational environment quality, including supportive culture, collaborative relationships, decision-making participation, and innovation encouragement. According to Conservation of Resources theory, school climate, as an important contextual resource, may play a moderating role between work stressors and teachers' psychological responses (Thapa et al., 2013).

Empirical research shows that the moderating effects of school climate in the relationship between work stress and teacher professional outcomes present complex patterns. On one hand, positive school climate can provide psychological support and coping resources for teachers, alleviating the negative effects of work stress. Cohen et al. (2009) found that supportive school environments can significantly weaken the predictive effect of work demands on teacher burnout. Granziera et al. (2022) further confirmed that good school climate plays a protective role by satisfying teachers' basic psychological needs, effectively buffering the damage of work stress on teacher well-being.

On the other hand, school climate may also produce sensitization effects. Zhang et al.'s (2023) research found that teachers in high-quality school climates are more sensitive to changes in work environments and have stronger reactions to stressors. This phenomenon may stem from positive organizational environments raising teachers' expectation levels, making them more sensitive to work stress (Ford et al., 2019). Yang et al.'s (2024) multilevel analysis confirmed significant interaction effects between school climate and work stress, but the direction of action depends on specific stressor types and teacher characteristics.

Recent research has also revealed the moderating function of school climate in mediation pathways. Collie et al. (2020) found that school supportive environments can weaken the transformation process from work demands to emotional exhaustion. Li et al.'s (2021) research showed that positive school climate moderates the stress-strain response chain by enhancing teachers' coping efficacy.

Based on the above theoretical analysis and empirical evidence, this study proposes:

H5: School climate moderates the relationship between work stressors and teacher professional attitudes.

H6: School climate moderates the relationship between work stressors and Work-Related Strain.

Figure 1 presents the hypothesised moderated mediation model linking work stressors to teachers' professional attitudes via Work-Related Strain, with school climate moderating the direct and indirect paths.

(Fig. 1 is near here)

3. Research Methods

3.1 Participants

This study's data comes from the Teaching and Learning International Survey (TALIS) implemented by the Organization for Economic Cooperation and Development (OECD) in 2018, with Chinese teachers as research subjects. The original sample included 3,976 teachers. To ensure data quality, researchers conducted data cleaning on the original sample. First, samples with substantial missing values were removed; second, using consistency testing methods, individuals who selected the same option more than 70% of the time in scale items were excluded to avoid interference from invalid responses. After the above processing, 3,088 valid samples were finally obtained.

Table 1 shows the demographic characteristics of the final sample. In terms of gender, there were 2,311 female teachers (74.84%) and 777 male teachers (25.16%), with female teachers being the majority. In terms of education, bachelor's degree and above were predominant, with 2,641 (85.52%) having bachelor's degrees, 423 (13.70%) having master's degrees, 1 (0.03%) having doctoral degrees, and 23 (0.74%) below bachelor's level. In terms of teaching experience, 1,514 teachers (49.03%) had less than 15 years of experience, and 1,574 teachers (50.97%) had 15 years or more, with similar proportions in both groups. In terms of employment status, teachers with fixed-term contracts over one year were the most numerous (2,164, accounting for 70.08%), followed by permanently employed teachers (884, accounting for 28.63%), and teachers with short-term contracts of one year or less were the fewest (40, accounting for 1.30%).

Table 1
Demographic information for the study sample.

Characteristics	Sample (*N* = 3088)	
	n	%
Gender		
Male	777	25.16%
Female	2311	74.84%
Education Level		
Below Bachelor's	23	0.74%
Bachelor's	2641	85.52%
Master's	423	13.70%
Doctoral	1	0.03%
Teaching Experience		
0–5 years	534	17.29%
6–10 years	490	15.87%
11–15 years	490	15.87%
16–20 years	500	16.19%
21–25 years	446	14.44%
26–30 years	391	12.66%
31 + years	237	7.67%
Employment Status		
Permanent employment	884	28.63%
Fixed-term contract (> 1 year)	2164	70.08%
Fixed-term contract (≤ 1 year)	40	1.30%

In summary, this sample covers teacher groups of different genders, education levels, teaching experience, and employment statuses, demonstrating strong representativeness.

(Table 1 is near here)

3.2 Measurement Instruments

3.2.1 Work Stressors

This study used teacher work stressors as the independent variable, measured using Q52 items from the OECD TALIS 2018 teacher questionnaire (Jerrim & Sims, 2022). Eleven items used a four-point Likert scale (1 = not at all; 2 = to some extent; 3 = quite a bit; 4 = a lot), with higher scores indicating stronger stressors. Based on exploratory factor analysis results and theoretical classification, four dimensions were formed. Dimension 1 is workload pressure: too much lesson preparation (TT3G52A), too many lessons to teach (TT3G52B), too much marking/correcting of student

work (TT3G52C). Dimension 2 is administrative and role overload: too much administrative work (e.g., filling out forms) (TT3G52D), extra duties due to absent teachers (TT3G52E). Dimension 3 is classroom and student behavior pressure: maintaining discipline in the classroom (TT3G52G), being intimidated or verbally abused by students (TT3G52H). Dimension 4 is accountability and external demand pressure: being held responsible for students' achievement (TT3G52F), keeping up with changing requirements from authorities (TT3G52I), addressing concerns from parents or guardians (TT3G52J), adapting lessons for students with special learning needs (TT3G52K).

Scoring was done by averaging each item (or as loading indicators for four first-order latent variables), with the four dimensions jointly loading onto the second-order latent variable Job Stressors for structural equation analysis. The scale had good internal reliability, with overall Cronbach's α = 0.825. Confirmatory factor analysis showed excellent model fit: GFI = 0.943, RMR = 0.038, CFI = 0.901, AGFI = 0.901, IFI = 0.901, PNFI = 0.620, all meeting recommended validity standards, indicating that this scale can effectively reflect teachers' work stressor sources in different aspects.

3.2.2 Work-Related Strain

This study used teachers' Work-Related Strain as a mediating variable, measured by three items from Q51 of the TALIS 2018 teacher questionnaire: TT3G51A "I experience stress in my work," TT3G51C "My job has a negative impact on my mental health," and TT3G51D "My job has a negative impact on my physical health." All items used a four-point Likert scale (1 = not at all, 4 = a lot), with higher scores indicating higher levels of work-related strain experienced by teachers.

The original questionnaire design included a reverse-scored item (TT3G51B "My job leaves me time for my personal life"), but actual analysis found that this item had low factor loading and communality, and including it reduced overall reliability (Cronbach's α = 0.729). Therefore, to ensure scale reliability and validity, this study retained only the three positive items, with revised Cronbach's α increased to 0.802. Confirmatory factor analysis showed good fit for the single-factor model, with item loadings ranging from 0.755–0.889, and composite reliability (CR = 0.814) and average variance extracted (AVE = 0.600) both meeting recommended standards, indicating good convergent validity and that this scale can effectively reflect teachers' Work-Related Strain levels.

3.2.3 Teacher Professional Attitudes

This study used teacher professional attitudes as the dependent variable, measured using 8 items from Q53 of the TALIS 2018 teacher questionnaire. Based on exploratory factor analysis and theoretical classification, the scale was divided into two dimensions. Dimension 1: Professional Identity, containing 5 items: TT3G53A "The advantages of being a teacher clearly outweigh the disadvantages," TT3G53B "If I could decide again, I would still choose to work as a teacher," TT3G53E "I enjoy working at this school," TT3G53G "I would recommend my school as a good place to work," TT3G53H "I think that the teaching profession is valued in society." Dimension 2: Job Satisfaction, containing 2 items: TT3G53I "I am satisfied with my performance in this school," TT3G53J "All in all, I am satisfied with my job."

All items used a four-point Likert scale (1 = strongly disagree, 4 = strongly agree), with higher scores indicating more positive teacher attitudes toward their profession and work. Reliability analysis showed good internal consistency for the overall scale, with Cronbach's α = 0.841. Confirmatory factor analysis further supported the two-factor structure, with model fit reaching good levels (GFI = 0.965, RMR = 0.017, CFI = 0.956, NFI = 0.954, NNFI = 0.928, TLI = 0.928), indicating good structural validity and that this scale can effectively measure teachers' professional identity and job satisfaction, reflecting their overall professional attitude levels.

3.2.4 School Climate

This study used school climate as a moderating variable, measured using 8 items from Q48 of the TALIS 2018 teacher questionnaire. Based on theoretical classification, the scale can be divided into three dimensions. Dimension 1: Participation in Decision-Making, containing 3 items: TT3G48A ”The school provides staff with opportunities to actively participate in school decisions,” TT3G48B “The school provides parents or guardians with opportunities to actively participate in school decisions,” TT3G48C ”The school provides students with opportunities to actively participate in school decisions.”

Dimension 2: Collaborative Culture, containing 3 items: TT3G48D “There is a collaborative school culture which is characterised by mutual support,” TT3G48E ”There is a culture of shared responsibility for school issues,” TT3G48F “Staff have shared beliefs about teaching and learning.”

Dimension 3: Norms and Innovation, containing 2 items: TT3G48G ”Rules for student behaviour are consistently enforced in a fair manner from classroom to classroom,” TT3G48H “The school encourages staff to take on new initiatives.”

All items used a four-point Likert scale (1 = strongly disagree, 4 = strongly agree), with higher scores indicating more positive teacher perceptions of school climate. Reliability analysis showed good overall internal consistency (Cronbach’s α = 0.951). Confirmatory factor analysis results showed the three-factor model achieved good fit levels (GFI = 0.940, RMR = 0.012, CFI = 0.968, NFI = 0.968, NNFI = 0.948, SRMR = 0.030), indicating good structural validity and that this scale can effectively measure teachers’ professional attitudes and attitudes, reflecting their professional well-being levels.

3.2.5 Control Variables

Previous research indicates that demographic characteristics may affect teachers’ professional well-being. In this study, gender, education level, teaching experience, and employment status were included in the model as control variables.

3.3 Data Analysis

This study used SPSS 26.0 and Amos 26.0 for data analysis. First, Amos 26.0 was used for exploratory and confirmatory factor analysis to assess scale validity, and SPSS 26.0 was used for reliability analysis, common method bias testing, descriptive statistics, and correlation analysis. Second, PROCESS macro Model 4 was used to test the mediating role of Work-Related Strain, employing bias-corrected Bootstrap method (5,000 resamples), with significance of mediation effects determined by 95% confidence intervals not containing 0. PROCESS Model 8 was used to test the moderating role of school climate, with moderation effects determined by significance of interaction term regression coefficients, followed by simple slope analysis. All analyses controlled for variables such as gender, education level, teaching experience, and employment status, with significance level set at $p < 0.05$.

4. Results

4.1 Common Method Bias Testing

To address common method bias issues, preliminary control measures were implemented during questionnaire design and distribution. These measures included ensuring anonymous completion. Additionally, Harman’s single-factor test was employed to assess common method bias (Harman, 1976). Results showed 6 factors with eigenvalues exceeding 1.0 under unrotated conditions. Notably, the first factor explained 30.205% of the variance, below the 40% critical threshold. Therefore, this study showed no significant common method bias risk.

4.2 Descriptive Statistics and Correlation Analysis

Table 2 presents descriptive statistics for all research variables and their intercorrelations. Correlation analysis results show that correlations between research variables align with theoretical expectations, though not all are positive correlations. Specifically, work stressors showed significant positive correlation with Work-Related Strain ($r = 0.609$, $p < 0.001$), significant negative correlation with professional attitudes ($r = -0.333$, $p < 0.001$), and significant negative correlation with school climate ($r = -0.209$, $p < 0.001$). Work-Related Strain showed significant negative correlation with professional attitudes ($r = -0.437$, $p < 0.001$) and significant negative correlation with school climate ($r = -0.252$, $p < 0.001$). Professional attitudes showed significant positive correlation with school climate ($r = 0.496$, $p < 0.001$).

Table 2
Descriptive statistics and correlations analysis (*N = 3088*).

Variable	M	SD	1	2	3	4
1 = Job Stressors	1.976	0.504	1			
2 = Work-Related Strain	2.056	0.655	0.609***	1		
3 = Teacher Professional Attitudes	2.911	0.477	-0.333***	-0.437***	1	
4 = School Climate	3.078	0.560	-0.209***	-0.252***	0.496***	1
M mean, *SD* standard deviation.*$p < 0.05$,**$p < 0.01$,***$p < 0.001$ (two-tailed)						

These correlation directions and strengths provide preliminary support for subsequent mediation and moderation effect analyses. Among them, the highest correlation coefficient was between work stressors and Work-Related Strain ($r = 0.609$), indicating that work stressors are important predictors of Work-Related Strain. Meanwhile, the negative correlation between Work-Related Strain and professional attitudes ($r = -0.437$) and the positive correlation between professional attitudes and school climate ($r = 0.496$) both align with theoretical expectations. Moderate correlation strengths between variables (all less than 0.70) indicate no serious multicollinearity problems, laying a good foundation for further regression analysis.

(Table 2 is near here)

4.3 The Mediating Role of Work-Related Strain

To test the mediating role of Work-Related Strain in the relationship between work stressors and teacher professional attitudes, this study used the PROCESS macro Model 4 developed by Hayes (2017) for analysis. In this model, work stressors served as the independent variable, professional attitudes as the dependent variable, Work-Related Strain as the mediating variable, while demographic variables such as gender, education level, teaching experience, and employment status were included as control variables.

As shown in Table 3, work stressors had a significant negative effect on professional attitudes ($\beta = -0.326$, $t = -19.187$, $p < 0.001$), validating hypothesis H1; work stressors had a significant positive effect on Work-Related Strain ($\beta = 0.599$, $t = 41.598$, $p < 0.001$), supporting hypothesis H2; controlling for work stressors, Work-Related Strain had a significant negative effect on professional attitudes ($\beta = -0.364$, $t = -17.993$, $p < 0.001$), supporting hypothesis H3.

Table 3
Test of the mediating effect of work-related strain.

Dependent Variable	Independent Variable	R^2	Adjusted R^2	*F*	*β*	*SE*	*t*	*p*
Professional Attitudes		0.113	0.112	78.487***				
	Gender				0.018	0.019	1.039	0.299
	Academic Degree				0.006	0.024	0.334	0.739
	Length of Service as a Teacher				-0.077	0.001	-3.876***	0.000
	Employment Status				-0.037	0.019	-1.958	0.050
	Job Stressors				-0.326	0.017	-19.187***	0.000
Work-Related Strain		0.363	0.362	351.718***				
	Gender				-0.025	0.021	-1.757	0.079
	Academic Degree				-0.047	0.027	-3.037	0.002
	Length of Service as a Teacher				0.035	0.001	2.062	0.039
	Employment Status				0.025	0.022	1.579	0.114
	Job Stressors				0.599	0.019	41.598	0.000
Professional Attitudes		0.197	0.196	126.214***				
	Gender				0.009	0.018	0.522	0.602
	Academic Degree				-0.011	0.023	-0.633	0.527
	Length of Service as a Teacher				-0.064	0.001	-3.4035***	0.001
	Employment Status				-0.028	0.018	-1.546	0.122
	Job Stressors				-0.108	0.020	-5.3495***	0.000
	Work-Related Strain				-0.364	0.015	-17.9935***	0.000

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$ (two-tailed).

Further mediation effect analysis showed that when Work-Related Strain was included in the model, the direct effect of work stressors on professional attitudes decreased from − 0.326 to -0.108 (t = -5.349, p < 0.001). Although still

significant, the effect strength was markedly weakened, indicating that Work-Related Strain played a partial mediating role in their relationship. Additionally, including the mediating variable increased the model's explanatory power from 11.3% (adjusted 11.2%) to 19.7% (adjusted 19.6%), indicating that Work-Related Strain significantly enhanced the model's predictive efficacy.

Therefore, hypotheses H1, H2, and H3 were all supported.

(Table 3 is near here)

Using the bias-corrected bootstrap method (5,000 resamples) to test the mediating effect of Work-Related Strain, Table 4 shows that the total effect of work stressors on teacher professional attitudes was **− 0.317** (95% CI [-0.349, -0.285], p < 0.001). Among this, the direct effect was **− 0.105** (95% CI [-0.144, -0.067], p < 0.001), accounting for **33.1%** of the total effect; the indirect effect was **− 0.212** (95% CI [-0.246, -0.190], p < 0.001), accounting for **66.9%** of the total effect.

Table 4
Total, direct, and mediation effects of job stressors on teacher professional attitudes.

Path	Effect	Standard Error	Bias-corrected 95% CI		P	Ratio
			Lower	Upper limit		
Total effect	-0.317	0.017	-0.349	-0.285	0.000	100%
Direct effect	-0.105	0.020	-0.144	-0.067	0.000	33.1%
mediation effects	-0.212	0.014	-0.246	-0.190	0.000	66.9%
Job Stressors = > Work-Related Strain	0.785	0.019	0.748	0.822	0.000	-
Work-Related Strain = > Professional Attitudes	-0.270	0.015	-0.299	-0.241	0.000	-

(Table 4 is near here)

Further analysis showed that the indirect effect path consists of two components: the effect of work stressors on Work-Related Strain was significant (β = **0.785**, 95% CI [0.748, 0.822], p < 0.001), and the effect of Work-Related Strain on teacher professional attitudes was equally significant (β = **-0.270**, 95% CI [-0.299, -0.241], p < 0.001). The 95% confidence intervals for all paths did not contain 0, confirming that work stressors not only directly decrease teachers' professional attitudes but also indirectly affect professional attitudes by increasing Work-Related Strain. Work-Related Strain played a major mediating transmission role, with indirect effects accounting for 66.9% of total effects.

In summary, hypothesis H4 was supported. As shown in Fig. 2, the path model visually demonstrates the mediating mechanism through which work stressors affect teacher professional attitudes via Work-Related Strain.

(Fig. 2 is near here)

4.4 The Moderating Role of School Climate

To test the moderating effects of school climate in the process of work stressors affecting teacher professional attitudes, this study used PROCESS macro Model 8 for analysis. In this model, work stressors served as the independent variable, Work-Related Strain and professional attitudes served as dependent variables respectively (i.e.,

establishing two models), school climate served as the moderating variable, while gender, education level, teaching experience, and employment status were included as control variables.

Table 5 results show that in the model with Work-Related Strain as the dependent variable, work stressors had a significant positive effect on Work-Related Strain ($\beta = 0.920$, $t = 10.300$, $p < 0.001$), while school climate's direct effect on Work-Related Strain was not significant ($\beta = -0.040$, $t = -0.665$, $p = 0.506$). Crucially, the interaction term between work stressors and school climate had a significantly negative effect on Work-Related Strain ($\beta = -0.057$, $t = -1.995$, $p = 0.046$), indicating that good school climate can weaken the adverse effects of work stressors on Work-Related Strain.

Table 5
Test of the moderating effect of school climate.

Dependent Variable	Independent Variable	R^2	Adjusted R^2	*F*	*β*	*SE*	*t*	*p*
Work-Related Strain		0.381	0.380	271.200***				
	Gender				-0.039	0.021	-1.859	0.063
	Academic Degree				-0.077	0.027	-2.833	0.005**
	Length of Service as a Teacher				0.002	0.001	2.002	0.045*
	Employment Status				0.035	0.021	1.665	0.096
	Job Stressors				0.920	0.089	10.300	0.000***
	school climate				-0.040	0.060	-0.665	0.506
	Job Stressors×school climate				-0.057	0.029	-1.995	0.046*
Professional Attitudes		0.373	0.371	229.044***				
	Gender				0.011	0.016	0.682	0.495
	Academic Degree				-0.017	0.020	-0.860	0.390
	Length of Service as a Teacher				-0.003	0.001	-3.272**	0.001
	Employment Status				-0.029	0.016	-1.835	0.067
	Job Stressors				0.228	0.068	3.360***	0.001
	Work-Related Strain				-0.208	0.013	-15.449***	0.000
	school climate				0.561	0.045	12.482***	0.000
	Job Stressors×school climate				-0.096	0.021	-4.459***	0.000
*p < 0.05, **p < 0.01, ***p < 0.001 (two-tailed)								

In the model with teacher professional attitudes as the dependent variable, work stressors had a significant positive effect on professional attitudes (β = 0.228, t = 3.360, p = 0.001), Work-Related Strain had a significant negative effect on professional attitudes (β = -0.208, t = -15.449, p < 0.001), while school climate had a significant positive effect on professional attitudes (β = 0.561, t = 12.482, p < 0.001). More importantly, the interaction term between work stressors and school climate had a significantly negative effect on professional attitudes (β = -0.096, t = -4.459, p < 0.001),

indicating that school climate can significantly buffer the negative effects of work stressors on professional attitudes.

In summary, school climate not only plays a significant moderating role in the direct relationship between work stressors and teacher professional attitudes, but also shows significant moderating effects in the relationship between work stressors and Work-Related Strain. Therefore, hypotheses H5 and H6 were both supported. This result indicates that good school climate has dual protective effects, both reducing the enhancing effect of work stressors on teacher tension and weakening their negative impact on professional attitudes.

(Table 5 is near here)

4.4.1 School Climate's Moderating Role in the Direct Path

Further simple slope analysis (see Fig. 3) shows that school climate significantly moderated the direct effect of work stressors on teacher professional attitudes at different levels. In teacher groups with lower school climate levels, the direct effect of work stressors on professional attitudes was not significant (simple slope = -0.012, t = -0.585, p = 0.558); in teacher groups with moderate school climate levels, this effect was significantly negative (simple slope = -0.065, t = -3.756, p < 0.001); while in teacher groups with higher school climate levels, the negative effect of work stressors on professional attitudes was further enhanced (simple slope = -0.119, t = -5.585, p < 0.001).

This result indicates that school climate played an amplifying moderating role in the work stressors-professional attitudes relationship, meaning that as school climate improves, teachers' sensitivity to work stressors increases, making their negative impact on professional attitudes more pronounced. This phenomenon may reflect the elevation of expectation levels among teachers in good school climates, making them more sensitive to work stress perception and responses. When teachers are in positive work environments, they may develop higher sensitivity to work stress, thereby amplifying the negative effects of stressors on professional attitudes.

(Fig. 3 is near here)

Additionally, the conditional direct effects analysis in Table 6 further confirmed this moderating pattern. At lower school climate levels, the direct effect was not significant (Effect = -0.012, BootCI [-0.053, 0.029]); at moderate school climate levels, the direct effect was significantly negative (Effect = -0.065, BootCI [-0.100, -0.031]); at higher school climate levels, the direct effect was further enhanced (Effect = -0.119, BootCI [-0.160, -0.077]). This indicates that while improvements in school climate levels are generally beneficial for teacher professional development, they may also enhance teachers' reaction intensity to work stress.

Table 6
Conditional direct effects at different levels of school climate.

school climate		***Effect***	***BootSE***	***BootLLCI***	***BootULCI***
Moderated direct effect	E1(M-1SD)	-0.012	0.021	-0.053	0.029
	E2(M)	-0.065	0.017	-0.100	-0.031
	E3(M + 1SD)	-0.119	0.021	-0.160	-0.077

(Table 6 is near here)

4.4.2 School Climate's Moderating Role in the Mediation Path

Further analysis of school climate's moderating effects on the mediation pathway (see Fig. 4) showed that school climate significantly moderated the effect of work stressors on Work-Related Strain (β = -0.057, t = -1.995, p = 0.046). This result indicates that school climate played a buffering role in the process of transforming work stressors into Work-Related Strain.

(Fig. 4 is near here)

As shown in the conditional indirect effects analysis in Table 7, at different levels of school climate, the mediating effects of Work-Related Strain in the relationship between work stressors and professional attitudes showed significant differences. At lower school climate levels, the mediating effect was − 0.161 (BootCI [-0.192, -0.140]); at moderate levels it was − 0.155 (BootCI [-0.183, -0.136]); at high levels it was − 0.148 (BootCI [-0.174, -0.132]).

Table 7
Conditional indirect effects at different levels of school climate.

school climate		*Effect*	*BootSE*	*BootLLCI*	*BootULCI*
Moderated mediation effect	E1(M-1SD)	-0.161	0.013	-0.192	-0.140
	E2(M)	-0.155	0.012	-0.183	-0.136
	E3(M + 1SD)	-0.148	0.012	-0.174	-0.132

(Table 7 is near here)

This result indicates that as school climate levels improve, the mediating effect of Work-Related Strain gradually weakens, reflecting the protective moderating role of school climate. Specifically, good school climate can effectively alleviate the transformation of work stressors into Work-Related Strain, thereby weakening the negative mediating role of Work-Related Strain in the relationship between work stressors and professional attitudes. Since all confidence intervals did not contain 0, this indicates that at different school climate levels, the mediating effects of Work-Related Strain were all significant, but their strength weakened with improving climate levels.

In summary, research results confirmed the key moderating function of school climate in the mediation pathway: by creating positive organizational environments, it can slow down the transformation process from work stress to psychological tension, thereby protecting teachers' professional attitudes from excessive negative impacts.

5. Discussion

Based on Conservation of Resources Theory, this study explored the relationship mechanisms between Chinese teachers' work stressors and professional attitudes, particularly the mediating role of Work-Related Strain and the moderating effects of school climate. The research results provide important insights for understanding the complexity of teacher professional development and offer theoretical guidance for educational management practice.

5.1 Direct Effects of Work Stressors on Teacher Professional Attitudes

The study found that work stressors have significant negative effects on teacher professional attitudes, a result highly consistent with previous research (Madigan & Kim, 2021; Skaalvik & Skaalvik, 2020). From the perspective of Conservation of Resources Theory, work stressors represent threats to and consumption of teachers' valuable

resources. When teachers face multiple pressures such as excessive teaching loads, complex administrative work, and difficulties in student behavior management, their limited psychological and cognitive resources are heavily consumed, subsequently affecting positive cognition and emotional attachment to their profession (Hobfoll et al., 2018).

This finding has special significance in the Chinese educational context. Currently, China's educational "involution" phenomenon is increasingly serious, with teachers facing unprecedented work stress challenges (Zhang et al., 2023). This study confirms the direct damage of such stressful environments on teacher professional attitudes, providing empirical support for understanding Chinese teachers' professional development difficulties. Notably, the direct effect of work stressors on professional attitudes was relatively small ($\beta = -0.108$), indicating that stressors mainly affect professional attitudes through indirect pathways, emphasizing the importance of exploring mediation mechanisms.

5.2 The Mediating Transmission Role of Work-Related Strain

One of the most important findings of this study is that Work-Related Strain played a significant mediating role in the relationship between work stressors and professional attitudes, with indirect effects accounting for 66.9% of total effects. This result supports the core viewpoint of Conservation of Resources Theory regarding resource depletion processes: external stressors first trigger individual psychological tension reactions, which subsequently influence their cognitive evaluations and behavioral choices (Halbesleben, 2020).

Specifically, when teachers encounter work stressors, they first experience work-related tension, fatigue, and stress. These negative emotional states become key bridges connecting external pressure with internal attitude changes. This finding echoes Bakker and Demerouti's (2017) Job Demands-Resources model, indicating that the impact of work stress is a gradual resource consumption process rather than simple direct transformation.

The strong mediating role of Work-Related Strain also reveals the psychological mechanisms of teacher professional attitude changes. García-Carmona et al.'s (2019) research showed that teachers' emotional exhaustion is an important predictor of professional outcomes. This study further confirms that this psychological tension state is not only a result of work stress but also a key mediating variable affecting professional attitudes. This provides important theoretical contributions to understanding the psychological processes of teacher professional development.

5.3 Complex Moderating Effects of School Climate

The study found that school climate played complex moderating roles in the process of work stressors affecting teacher professional development, a result that both supports and challenges existing theoretical expectations. On one hand, school climate played the expected buffering effect in the relationship between work stressors and Work-Related Strain, with good school climate reducing the transformation of work stress into psychological tension, consistent with the resource acquisition viewpoint of Conservation of Resources Theory (Granziera et al., 2022).

On the other hand, school climate showed unexpected amplifying effects in the direct relationship between work stressors and professional attitudes. Specifically, in high-quality school climates, the negative impact of work stressors on professional attitudes was actually stronger. This finding challenges traditional "buffering hypotheses," suggesting that the mechanisms of school climate are more complex than expected.

This amplifying effect may stem from several reasons. First, positive school climates may raise teachers' expectation levels, making them more sensitive to changes in work environments (Ford et al., 2019). When teachers are in high-quality organizational environments, they may develop stronger feelings of discomfort and disappointment toward work stress. Second, good school climates may enhance teachers' sense of professional identity, making them react more strongly to factors threatening professional development (Collie et al., 2020).

5.4 Integrated Understanding of Theoretical Mechanisms

This study revealed a complex moderated mediation model where school climate played differentiated moderating roles in different pathways. In the mediation pathway, school climate played a protective role by weakening the transformation of work stress into Work-Related Strain; in the direct pathway, school climate may amplify the impact of work stress by enhancing sensitivity. This dual moderating mechanism provides new theoretical perspectives for understanding the complex roles of organizational contextual factors.

From the perspective of Conservation of Resources Theory, this finding indicates that the role of resources is not simply linear. Positive organizational environments can serve as protective resources to alleviate stress impacts, but may also serve as cognitive standards to enhance threat perception. This complexity reminds us that when designing organizational intervention strategies, we need to fully consider the multiple action mechanisms of contextual factors (Yang et al., 2024).

5.5 Special Considerations of Cultural Context

The findings of this study in Chinese teacher populations have important cultural contextual significance. Teachers in China's collectivist cultural background may have higher sensitivity to school climate, with positive organizational environments potentially raising their expectations for work quality, thereby amplifying reactions to stressors (Li et al., 2021). This cultural specificity provides important insights for cross-cultural teacher management research.

Additionally, the special characteristics of China's educational system may also influence the interpretation of research results. In highly standardized and accountability-based educational environments, teachers may have stronger sensitivity to work stress, and the mechanisms of school climate may also present unique patterns (Wang et al., 2020).

6. Theoretical and Practical Implications

6.1 Theoretical Contributions

This study made three important contributions to teacher professional development theory. First, it constructed a theoretical framework for work stressors affecting teacher professional attitudes based on Conservation of Resources Theory, revealing the mediating transmission mechanism of Work-Related Strain as a psychological representation of resource depletion, enriching the theoretical content of teacher stress research. Second, it discovered differentiated moderating effects of school climate in different action pathways, challenging traditional single buffering assumptions and providing new theoretical perspectives for understanding the complex roles of organizational contextual factors. School climate can both play protective roles by weakening the transformation of stress into psychological tension and potentially amplify the direct impact of stress on professional attitudes by enhancing sensitivity. This dual moderating mechanism expands existing theoretical boundaries. Finally, it validated the applicability of Conservation of Resources Theory in the Chinese educational cultural context, providing important empirical foundations for cross-cultural teacher management research.

6.2 Practical Implications

Research results provide specific guidance for educational management practice. First, given the strong mediating role of Work-Related Strain, educational administrators should emphasize early identification and intervention of teacher mental health, establishing systematic teacher psychological support systems. Second, the complex moderating effects of school climate suggest that managers need to balance organizational environment

construction, creating positive climates while reasonably managing teacher expectations to avoid disappointment effects caused by excessively high expectations. Specifically, work environments can be optimized through measures such as reducing unnecessary administrative tasks, providing adequate professional development opportunities, and establishing fair evaluation mechanisms. Finally, differentiated teacher support strategies should be established, designing personalized intervention programs targeting different work stressors and school climate levels to maximize the effectiveness of organizational support.

7. Limitations and Future Research

This study has several limitations that need improvement in future research. First, although TALIS data has international authority and representativeness, its cross-sectional design limits causal relationship inferences. Future research should adopt longitudinal tracking designs to verify causal relationships and dynamic change processes between variables. Second, the timeliness of TALIS 2018 data may affect the current applicability of results, especially since teacher work modes have undergone major changes after the COVID-19 pandemic, requiring validation with more recent data in the future. Additionally, the complex moderating effect mechanisms of school climate still need further exploration. Future research can deeply examine the influence of teacher individual differences and school-level variables on these moderating effects. Finally, this research is based only on Chinese TALIS data. Future studies should conduct cross-national comparative analyses to verify the cross-cultural universality and cultural specificity of the model.

Declarations

Data Availability

This study used third-party data from the OECD Teaching and Learning International Survey (TALIS) 2018, which are publicly available from the OECD website. For the purpose of peer review, the processed analysis dataset, variable codebook (definitions, coding, and transformations), and analysis scripts/output logs are provided to referees and editors as Supplementary Materials (for review only) or via a stable repository link accessible during peer review. Redistribution of raw TALIS data is subject to the OECD’s data use terms.

Ethical Approval

This article does not contain any studies with human participants performed by any of the authors. This study used publicly available secondary data from the OECD TALIS 2018 survey.

Informed Consent

Informed consent was obtained by the data owners during the original TALIS 2018 data collection, in accordance with the OECD’s ethics and data protection procedures. This article does not contain any studies with human participants performed by any of the authors.

References

1. Bakker AB, de Vries JD (2021) Job demands–resources theory and self-regulation: New explanations and remedies for job burnout. Anxiety Stress Coping 34(1):1–21
2. Bakker AB, Demerouti E (2017) Job demands–resources theory: Taking stock and looking forward. J Occup Health Psychol 22(3):273–285

3. Cavioni V, Conte E, Ornaghi V (2024) Promoting teachers' wellbeing through a serious game intervention: A qualitative exploration of teachers' experiences. Front Psychol 15:1339242
4. Chen L, Zhou M (2020) Teacher burnout and professional identity in Chinese secondary schools: The mediating role of psychological capital. Teach Teacher Educ 96:103192
5. Chen S, Westman M, Hobfoll SE (2015) The commerce and crossover of resources: Resource conservation in the service of resilience. Stress Health 31(2):95–105
6. Cohen J, McCabe EM, Michelli NM, Pickeral T (2009) School climate: Research, policy, practice, and teacher education. Teachers Coll Record 111(1):180–213
7. Collie RJ, Granziera H, Martin AJ (2020) Teachers' perceived autonomy support and adaptability: An investigation employing the job demands-resources model as relevant to workplace exhaustion, disengagement, and commitment. Teach Teacher Educ 94:103103
8. Collie RJ, Shapka JD, Perry NE, Martin AJ (2018) Teachers' beliefs about social-emotional learning: Identifying teacher profiles and their relations with job stress and satisfaction. Learn Instruction 53:90–99
9. Doan S, Steiner ED, Pandey R, Woo A (2023) Teacher well-being and intentions to leave: Findings from the 2023 State of the American Teacher Survey. *RAND Corporation*, RR-A1108-8
10. Ford TG, Olsen J, Khojasteh J, Ware J, Urick A (2019) The effects of leader support for teacher psychological needs on teacher burnout, commitment, and intent to leave. J Educational Adm 57(6):615–634
11. García-Carmona M, Marín MD, Aguayo R (2019) Burnout syndrome in secondary school teachers: A systematic review and meta-analysis. Soc Psychol Educ 22(1):189–208
12. Granziera H, Collie R, Martin A (2022) Teacher well-being: Investigating the contributions of school climate and job crafting. Cogent Educ 9(1):2044583
13. Granziera H, Collie R, Tobias J, Martin A (2024) School climate and teacher wellbeing: The role of basic psychological need satisfaction in student- and school-related domains. Teach Teacher Educ 147:104672
14. Halbesleben JR (2020) A meta-analysis of work engagement: Relationships with burnout, demands, resources, and consequences. Acad Manag J 53(6):1124–1145
15. Halbesleben JR, Neveu JP, Paustian-Underdahl SC, Westman M (2014) Getting to the COR understanding the role of resources in conservation of resources theory. J Manag 40(5):1334–1364
16. Harman HH (1976) Modern factor analysis. University of Chicago Press
17. Hayes AF (2017) Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford
18. Hobfoll SE (1989) Conservation of resources: A new attempt at conceptualizing stress. Am Psychol 44(3):513–524
19. Hobfoll SE (2001) The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. Appl Psychol 50(3):337–421
20. Hobfoll SE (2002) Social and psychological resources and adaptation. Rev Gen Psychol 6(4):307–324
21. Hobfoll SE (2011) Conservation of resources theory: Its implication for stress, health, and resilience. In: Folkman S (ed) The Oxford handbook of stress, health, and coping. Oxford University Press, pp 127–147
22. Hobfoll SE, Halbesleben J, Neveu JP, Westman M (2018) Conservation of resources in the organizational context: The reality of resources and their consequences. Annual Rev Organizational Psychol Organizational Behav 5:103–128
23. Hobfoll SE, Shirom A (2000) Conservation of resources theory: Applications to stress and management in the workplace. In: Golembiewski RT (ed) Handbook of organizational behavior. Marcel Dekker, pp 57–81

24. Huang R, Spector JM, Yang J (2022) Educational technology: A primer for the 21st century teacher in China. Education Tech Research Dev 70(1):285–303
25. Jerrim J, Sims S (2022) School accountability and teacher stress: International evidence from the OECD TALIS study. Educational Assess Evaluation Account 34(1):5–32
26. Johnson S, Cooper C, Cartwright S, Donald I, Taylor P, Millet C (2019) The experience of work-related stress across occupations. J Managerial Psychol 20(2):178–187
27. Kahneman D, Tversky A (1979) Prospect theory: An analysis of decision under risk. Econometrica 47(2):263–291
28. Klassen RM, Chiu MM (2010) Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. J Educ Psychol 102(3):741–756
29. Li L, Hallinger P, Ko J (2021) Principal leadership and school capacity effects on teacher learning in Hong Kong. Int J Educational Manage 35(1):76–90
30. Li L, Kanchanapoom K, Deeprasert J, Karnjana K, Tongkhow P (2025) Unveiling the factors shaping teacher job performance: Exploring the interplay of personality traits, perceived organizational support, self-efficacy, and job satisfaction. BMC Psychol 13(1):14
31. Li S, Li Y, Wang H, Zhang Q, Xu F (2019) Mingjiao culture and teacher stress in mainland China. Compare: J Comp Int Educ 49(6):954–974
32. Liu Y, Bellibaş MŞ, Gümüş S (2021) The effect of instructional leadership and distributed leadership on teacher self-efficacy and job satisfaction: Mediating roles of supportive school culture and teacher collaboration. Educational Manage Adm Leadersh 49(3):430–453
33. Madigan DJ, Kim LE (2021) Towards an understanding of teacher attrition: A meta-analysis of burnout, job satisfaction, and teachers' intentions to quit. Teach Teacher Educ 105:103425
34. Marken S, Agrawal S (2022) K-12 workers have highest burnout rate in U.S. *Gallup Workplace*, June 13, 2022
35. Mérida-López S, Extremera N (2017) Emotional intelligence and teacher burnout: A systematic review. Educational Res Rev 22:121–140
36. National Education Association (2024) What's causing teacher burnout? *NEA Today*, February 15, 2024
37. Ouellette RR, Frazier SL, Shernoff ES, Cappella E, Mehta TG, Marín-Martínez A, Atkins MS (2018) Teacher job stress and satisfaction in urban schools: Disentangling individual-, classroom-, and organizational-level influences. Behav Ther 49(4):494–508
38. Ozamiz-Etxebarria N, Fernnadez L, Lipnicki I, Mondragon DMI, N., Santabárbara J (2023) Prevalence of burnout among teachers during the COVID-19 pandemic: A meta-analysis. Int J Environ Res Public Health 20(6):4866
39. Pressley T (2021) Factors contributing to teacher burnout during COVID-19. Educational Researcher 50(5):325–327
40. Ryan RM, Deci EL (2020) Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. Contemp Educ Psychol 61:101860
41. Sims S (2020) Modelling the relationships between teacher working conditions, job satisfaction and workplace mobility. Br Edu Res J 46(2):301–320
42. Singh Y, Gautam D (2024) The impact of job satisfaction on teacher mental health: A call to action for educational policymakers. Open Educ Stud 6(1):20240008
43. Skaalvik EM, Skaalvik S (2014) Teacher self-efficacy and perceived autonomy: Relations with teacher engagement, job satisfaction, and emotional exhaustion. Psychol Rep 114(1):68–77
44. Skaalvik EM, Skaalvik S (2020) Teacher burnout: Relations between dimensions of burnout, perceived school context, job satisfaction and motivation for teaching. A longitudinal study. Teachers Teach 26(7–8):602–616

45. Spilt JL, Koomen HM, Thijs JT (2011) Teacher wellbeing: The importance of teacher–student relationships. Educational Psychol Rev 23(4):457–477
46. Thapa A, Cohen J, Guffey S, Higgins-D'Alessandro A (2013) A review of school climate research. Rev Educ Res 83(3):357–385
47. Viac C, Fraser P (2020) Teachers' well-being: A framework for data collection and analysis. *OECD Education Working Papers*, No. 213, OECD Publishing
48. Wang H, Hall NC, Rahimi S (2020) Self-efficacy and causal attributions in teachers: Effects on burnout, job satisfaction, illness, and quitting intentions. Teach Teacher Educ 47:120–130
49. Wang J, Li H (2022) Work stress and burnout among Chinese teachers: A systematic review. Front Psychol 13:884875
50. Woods S, Sebastian J, Herman KC, Huang FL, Reinke WM, Thompson AM (2023) The relationship between teacher stress and job satisfaction as moderated by coping. Psychol Sch 60(4):1234–1248
51. Yang C, Sharkey JD, Reed LA, Chen C, Dowdy E (2024) Multifaceted perception of school climate: Association between students' and teachers' perceptions and other teacher factors. Front Educ 9:1411503
52. Yang X, Zhang P (2021) Professional learning communities and teacher professional development in rural China: The mediating role of teacher self-efficacy. Prof Dev Educ 47(4):617–634
53. Zhang LJ, Fathi J, Mohammaddokht F (2023) Predicting teaching enjoyment from teachers' perceived school climate, self-efficacy, and psychological wellbeing at work: EFL teachers. Percept Mot Skills 130(5):2269–2299
54. Zhang L, Wang S, Liu X (2023) Educational involution and teacher stress in contemporary China: A mixed-methods study. Int J Educational Dev 98:102736

Figures

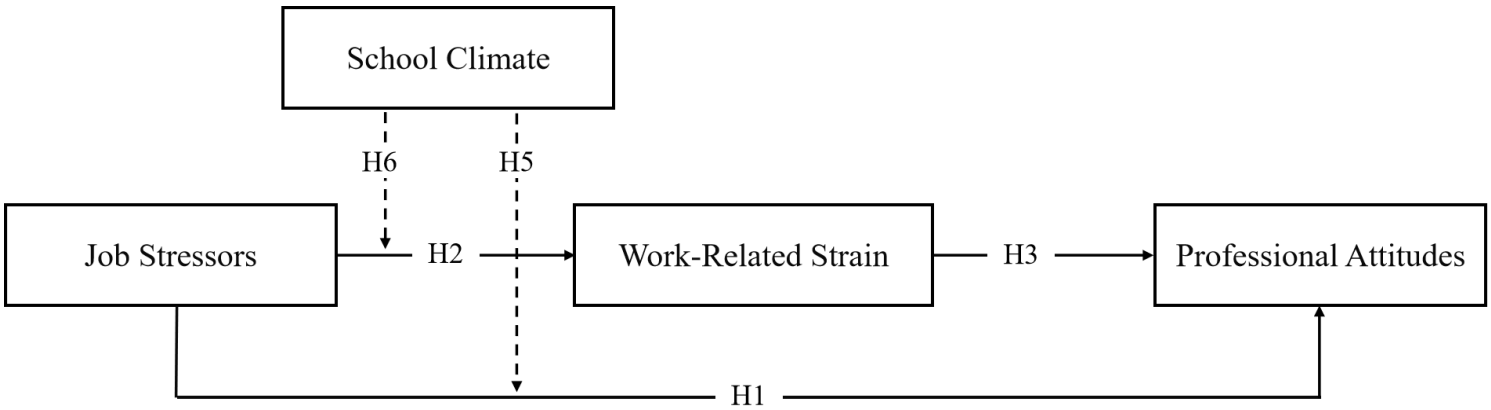


Figure 1

Research framework.

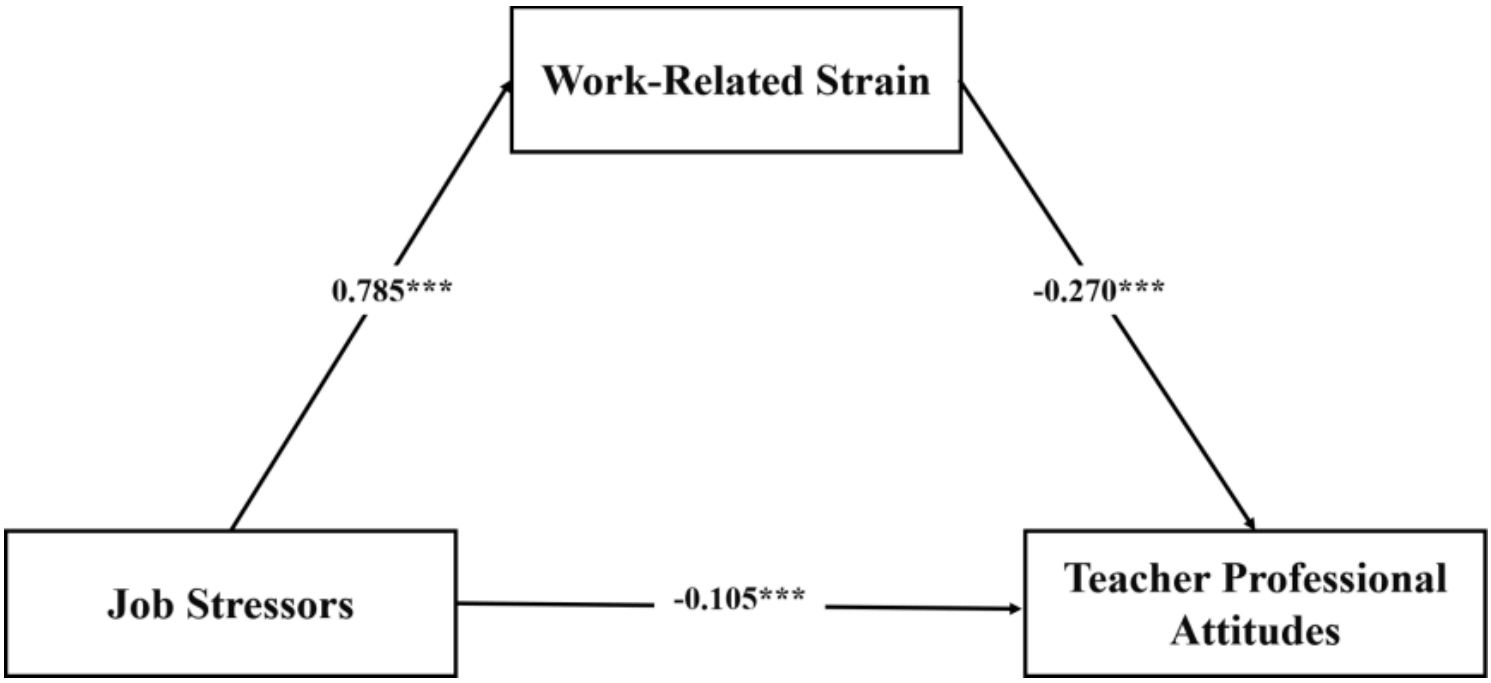


Figure 2

The effects of job stressors on teacher professional attitudes.

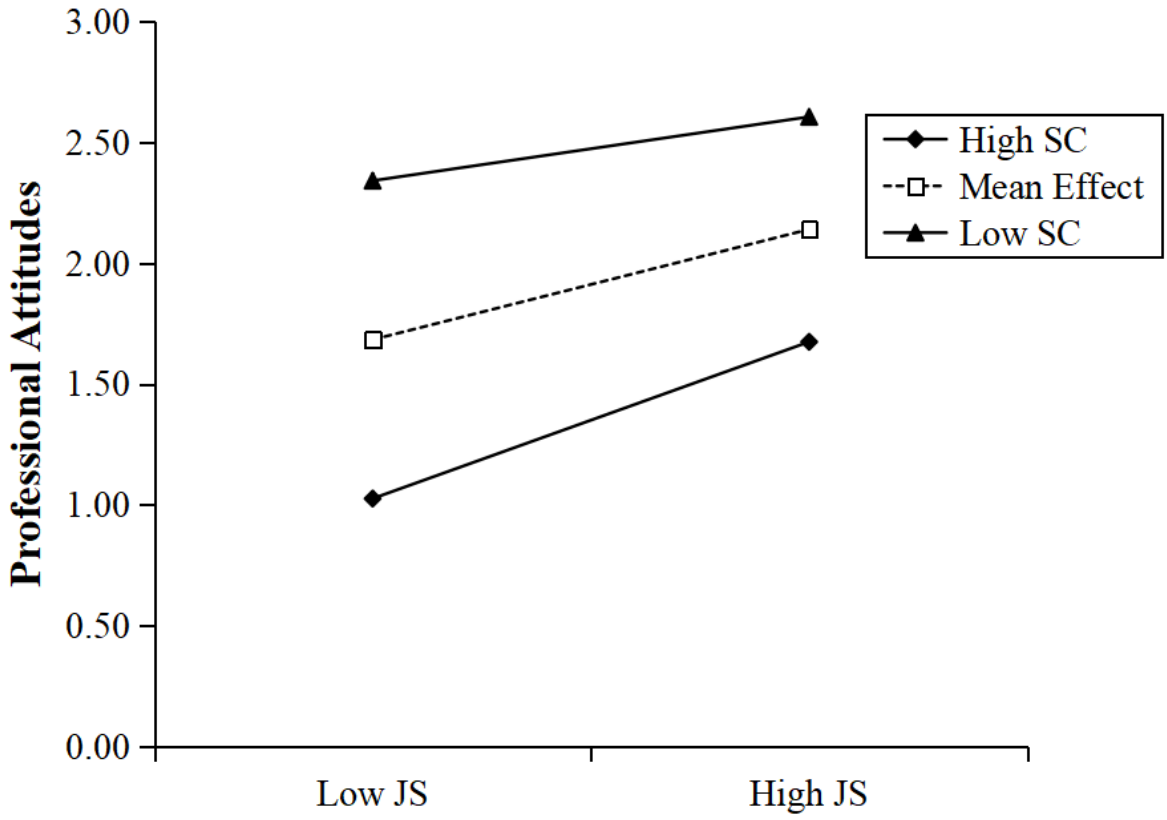


Figure 3

School climate as a moderator in the relationship between job stressors and professional attitudes. JS = Job Stressors; SC = School Climate.

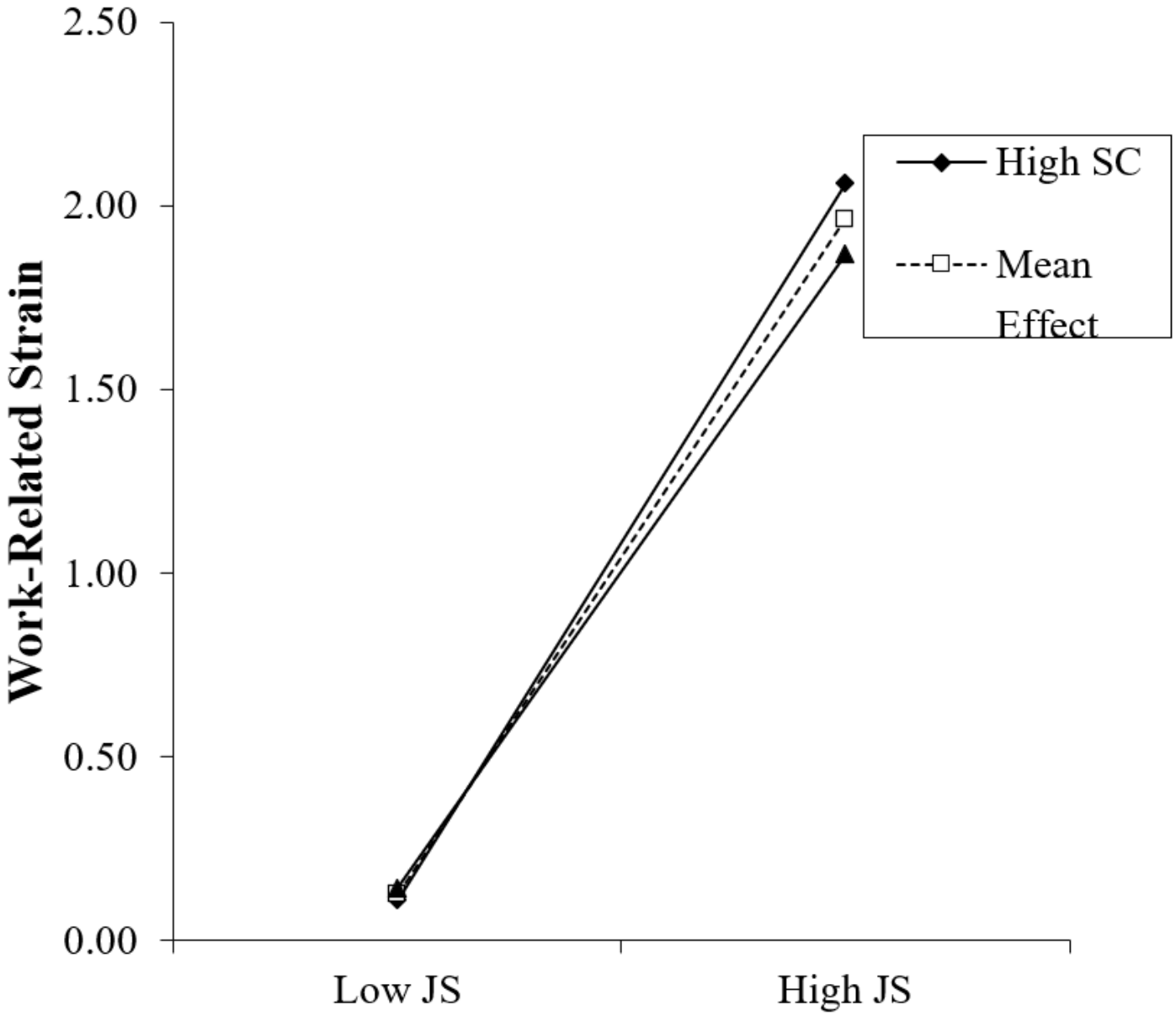


Figure 4

School climate as a moderator in the relationship between job stressors and work-related strain. JS = Job Stressors; WRS = Work-Related Strain; SC = School Climate.