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Mental Health of Teachers: Factors Affecting Teachers' Stress and Burnout In Private Tertiary Institutions In Shandong, China

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Abstract: Teacher stress and burnout are undermining instructional quality and educator well-being in China's private tertiary sector. This study investigates how five workplace conditions—teaching load, administrative responsibilities, working environment, job security, and students' behavior—shape stress/burnout (SB) and, in turn, mental-health outcomes (MHO) among university teachers in Shandong. Using a cross-sectional survey of N=300 and a reflective measurement model (~50 items), we estimated a PLS-SEM with 1,000-sample bootstrapping. Reliability and validity met accepted thresholds (α and CR high; AVE ≥ .50; Fornell–Larcker/HTMT satisfied). All direct paths were significant and in theorized directions: WE→SB β=−0.580, STB→SB β=0.244, JS→SB β=−0.161, TL→SB β=0.141, AR→SB β=0.107; downstream, SB→MHO β=−0.687 (all p<.05). Explanatory power was substantial (R^2_SB=0.584; R^2_MHO=0.473), with strong predictive relevance (Q^2_SB=0.504; Q^2_MHO=0.359). Mediation tests showed SB significantly carried the effects of all five antecedents to MHO, strongest for WE→SB→MHO (β_ind=0.398). Findings corroborate JD-R's health-impairment pathway and COR's resource-loss logic, highlighting high-leverage institutional actions: improve environmental resources and collegial support, stabilize employment, streamline administrative tasks, and bolster classroom-management capacity. The results provide an empirically grounded agenda for reducing stress, preventing burnout, and strengthening the sustainability of private higher education in Shandong.

Keywords: Teacher stress, Burnout, Mental health, Job Demands–Resources (JD-R), Conservation of Resources (COR), Shandong private universities, China.

1. Introduction

Teacher stress and burnout have emerged as systemic challenges that erode instructional quality and educator well-being across contexts. Burnout is classically conceptualized as a multidimensional syndrome comprising emotional exhaustion, depersonalization, and a diminished sense of professional accomplishment (Maslach, 2018) . Although the phenomenon

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is globally documented, the problem is particularly acute in China's private tertiary sector, where structural constraints, institutional pressures, and cultural expectations converge to create chronically demanding work environments. In Shandong province, these pressures manifest as elevated teacher turnover and persistent strain, suggesting a sustained mismatch between institutional demands and available resources (Zhang, 2021) Within this milieu, teachers report extensive teaching hours, heavy administrative obligations, and intensifying research expectations tied to rankings—demands that are rarely offset by adequate professional supports such as training or counseling services (Yang & Wang, 2020). Cultural norms further discourage open discussion of mental health; in Confucian contexts that cast teachers as moral exemplars, acknowledging psychological distress may be read as weakness, promoting suppression and internalization of stress and thereby entrenching emotional exhaustion (Chen, 2020). International evidence underscores the scale of the challenge. Comparative reports note high stress levels among teachers: for example, 59% in the United States report frequent job-related stress (Steiner & Woo, 2021); 77% in the United Kingdom cite unmanageable workloads (Hulme et al., 2024), 89% in India report stress linked to low pay and professional-development deficits (India, 2020); and 63% of Japanese educators report high stress within cultures of long working hours (Hojo, 2021). Rates are also elevated in South Korea (78%), with pressures from parental expectations and competitive systems (JUNG, 2022). In China, estimates indicate substantial burnout and moderate-to-severe stress, including in Shandong, where large classes, administrative duties, and hierarchical norms intensify demands (Zhang, 2021). Australia similarly reports widespread emotional exhaustion among teachers (Monash, 2022). These convergent patterns situate Shandong's private institutions within a broader global landscape while highlighting local drivers that plausibly amplify risk.

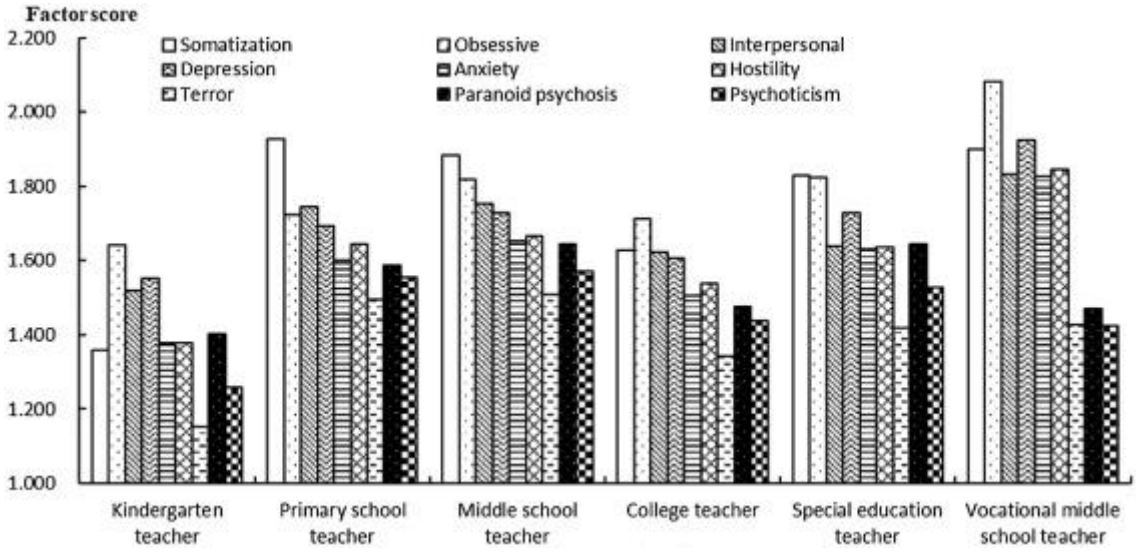

Figure 1. Different Types of Teachers with mental health trend in China Source:(Yang et al., 2019)

The empirical literature consistently associates job stress with downstream burnout, with salient antecedents including excessive workload, administrative burden, and deficient work environments (Zhong et al., 2009). In Shandong's private universities, faculty frequently juggle large enrollments, conflicting role expectations, and organizational cultures that discourage

candid engagement with mental health concerns (Chen, 2020). Left unaddressed, prolonged stress carries physical sequelae (e.g., chronic fatigue, sleep disturbance, cardiovascular risk) and psychological harms (e.g., anxiety, depression), which, in turn, diminish teaching efficacy, fuel turnover, and inflate recruitment and onboarding costs—outcomes that threaten continuity and quality in institutions already contending with resource constraints (Chen & Huang, 2016; Huang, 2023). Despite these stakes, the literature remains thin on how specific, policy-relevant stressors—teaching load, administrative responsibilities, working environment, job security, and student behavior—jointly shape burnout and mental health among teachers within Shandong's private tertiary sector. Addressing this gap, the present study proposes and tests a model in which job stress and burnout function as key mechanisms linking concrete job demands to mental-health outcomes. Three research questions guide the investigation: (1) To what extent do teaching load, administrative responsibilities, working environment, job security, and student behavior predict teachers' stress and burnout in Shandong's private universities? (2) Do stress and burnout adversely affect teachers' mental-health outcomes? (3) Do stress and burnout mediate the relationships between these job demands and mental health? Correspondingly, the study pursues three objectives: to examine the demand to stress/burnout pathways; to estimate the impact of stress/burnout on mental health; and to assess the mediating role of stress/burnout in the demands to mental-health linkage. The study is delimited to university teachers in private tertiary institutions in Shandong—a strategically important setting that combines rapid sectoral growth with distinct governance, resourcing, and performance-management arrangements. Private institutions play a pivotal role in meeting expanding higher-education demand, yet they often rely intensely on faculty output for institutional reputation, a dependence that can magnify workload and performance pressures (Zhang, 2021). A quantitative design employing structured surveys enables systematic measurement of the focal constructs and relationships, while structural equation modeling provides a rigorous framework for evaluating the hypothesized mediation by job stress. This scope is analytically useful and practically relevant: it isolates actionable levers within institutions and acknowledges contextual features resource constraints, hierarchical decision-making, and cultural scripts—that shape the stress process. The anticipated contributions are both theoretical and applied. Theoretically, the study advances understanding of teacher well-being by specifying a mechanism in which identifiable job demands operate through stress and burnout to impair mental health, aligning with and extending established frameworks in the field. Practically, the findings are designed to inform institutional and policy responses. By pinpointing the relative influence of demands such as workload, administrative burden, working environment, job security, and student behavior, the study can guide targeted interventions, improving environmental supports and collegial climates, stabilizing employment arrangements, streamlining administrative processes, and strengthening classroom-management capacity. The analysis also speaks to the potential value of embedding emotional-intelligence–oriented professional development and accessible counseling services within institutional support systems (Chen, 2020; Yang & Wang, 2020). Collectively, such measures could enhance teacher retention, safeguard instructional quality, and strengthen the sustainability of private tertiary education in Shandong, with implications for similarly situated systems across China. Teacher stress and burnout undermine instructional quality and educator well-being, and are

especially acute in Shandong's private tertiary institutions where heavy teaching loads, administrative and research pressures, limited support, and Confucian-norm stigma around mental health drive high turnover and chronic strain. This study asks: (1) do teaching load, administrative responsibilities, working environment, job security, and student behavior predict teachers' stress and burnout; (2) do stress and burnout degrade mental-health outcomes; and (3) do stress and burnout mediate the links between these job demands and mental health? Accordingly, it aims to examine those demand to stress/burnout relationships, estimate the impact of stress/burnout on mental health, and (test the mediating role of stress/burnout. The significance lies in delivering evidence to guide targeted institutional and policy interventions to improving work environments, stabilizing contracts, streamlining administration, strengthening classroom-management supports, and integrating emotional-intelligence–based professional development to enhance teacher well-being, teaching quality, retention, and the sustainability of private higher education in Shandong.

Table 1. Stress in top 7 countries in the World

Country	Stress Levels (%)	Key Stressors	Reference
United States	59% of teachers report frequent job-related stress	Workload, student behavior management, administrative tasks	RAND Corporation (RAND, 2022)
United Kingdom	77% of teachers find workloads unmanageable	Long working hours, stress-related absences due to mental health	National Education Union((NEU), 2021)
India	89% of teachers experience stress	Low salaries, lack of professional development, inadequate rural infrastructure	Times of India (India, 2020)
Japan	63% of educators report high stress levels	Long working hours (average 60/week), societal expectations for discipline, "karoshi" (death by overwork)	OECD Survey (OECD, 2021)
South Korea	78% of teachers experience job-related stress	Parental expectations, cyberbullying, competitive education systems	Korean Federation of Teachers' Associations (JUNG, 2022)
China	52% experience burnout; 48% report moderate-to-severe stress in Shandong	Administrative duties, high student-teacher ratios, cultural emphasis on discipline and hierarchy	(Zhang, 2021) Nationwide
Australia	74% feel emotionally exhausted	Workload, student behavior, attrition rates within the first five years	Monash University (Monash, 2022)

2. Literature Review

2.1 Private Universities in Shandong, China

Private tertiary education in Shandong, China, has expanded significantly over the past decade, driven by economic development and increasing demand for higher education opportunities. Shandong is home to numerous private universities, including Shandong Yingcai University, Shandong Xiehe University, and Qilu University of Technology, which collectively employ more than 15,000 faculty members Ministry of Education (Education, 2021). These institutions cater to a diverse student body but operate under significant constraints, including limited funding and heightened competition with public universities. Teachers in private universities face unique

challenges that directly impact their well-being. According to a survey conducted by the Shandong Education Bureau (Bureau, 2022), 53% of teachers reported experiencing high levels of stress, and 38% exhibited symptoms of burnout. Factors contributing to these outcomes include high teaching loads, insufficient institutional support, and the stigma surrounding mental health. Recent reports have highlighted cases where teachers resigned due to severe stress. For example, in 2022, a teacher from a private university in Jinan left their position citing overwhelming administrative duties and a lack of mental health resources(Bureau, 2022).

2.2 Mental Health Crisis In Shangdong

The mental health crisis among teachers in Shandong reflects broader systemic issues in private education. Teachers are often hesitant to seek help due to cultural norms that discourage discussions about mental health, exacerbating the problem. These findings underscore the urgent need for targeted interventions to address stress and burnout in this context. Mental health outcomes encompass the overall emotional, psychological, and social well-being of educators (Yang et al., 2019). Poor mental health can manifest in symptoms of anxiety, depression, and chronic stress, negatively affecting personal and professional life.Research on mental health in academia provides valuable insights into the challenges faced by educators in various educational settings. Numerous studies have highlighted the prevalence of stress, burnout, and job dissatisfaction among university faculty members, with private tertiary institutions presenting distinct difficulties. In the United States, a national study found that nearly 60% of educators experience significant job-related stress, often linked to excessive workload, administrative pressures, and student-related challenges (RAND, 2022). Similarly, in the United Kingdom, a survey revealed that over 75% of faculty members consider their workload unmanageable, leading to increased stress and emotional exhaustion National Education Union ((NEU), 2021). Studies conducted in India indicate that more than 85% of teachers experience high levels of stress, largely due to low salaries, limited professional growth, and institutional challenges (Chen et al., 2023). In East Asia, academic stress is particularly prevalent in Japan and South Korea, where long working hours and strict performance expectations contribute to burnout. Japanese educators work an average of 60 hours per week, with many reporting symptoms of chronic fatigue and job dissatisfaction (OECD, 2021). South Korean faculty members face additional pressures, including parental expectations and cyberbullying, with nearly 80% experiencing work-related stress. In China, research has shown that over 50% of university educators report symptoms of anxiety and depression, with private institutions having higher stress levels than their public counterparts. Key factors contributing to these challenges include job insecurity, administrative burdens, and a lack of mental health support services (Zhang, 2021). A study conducted in Shandong province found that approximately 55% of private university faculty members experience severe stress, while 40% report burnout symptoms Shandong Education Bureau (Bureau, 2022). The increasing body of research highlights the urgent need for targeted interventions to improve educators' mental well-being. Examining international trends and local challenges provides critical insights into the mental health landscape in academia and potential strategies for fostering a healthier work environment in private tertiary institutions. Research on mental health in academia provides valuable insights

into the challenges faced by educators in various educational settings. Numerous studies have highlighted the prevalence of stress, burnout, and job dissatisfaction among university faculty members, with private tertiary institutions presenting distinct difficulties. Existing research demonstrates the widespread use of theoretical models such as the Conservation of Resources (COR) Theory (Chen, 2020) (Chen, 2020; Hobfoll, 1989; Liu, 2024), the Job Demands-Resources (JD-R) Model (Bakker & Demerouti, 2007; Jennings & Greenberg, 2009; Zhang, 2021), and the Emotional Intelligence Theory (Goleman, 2005; Huang, 2023). However, some studies lack a clear theoretical foundation, limiting the generalizability of their findings. The absence of strong theoretical frameworks in prior research suggests a need for a more structured approach to understanding stress and burnout in educators.

Table 2. Theories used in Past Studies on Mental Health Research

Study	Focus	Theory Used	Methods
(Chen, 2020)	Cultural impact on teacher stress	Conservation of Resources (COR) Theory	Survey and qualitative interviews
Jennings & Greenberg (2009)	Impact of student behavior on stress	Transactional Model of Stress and Coping	Survey-based analysis
Wang & Chan (2021)	Burnout among university educators	Job Demands-Resources (JD-R) Model	Meta-analysis
Zhang et al. (2021)	Job stress and burnout in private universities	COR Theory	Quantitative survey
Yang & Sun (2023)	Student behavior and faculty mental health	JD-R Model	Survey and behavioral observation
(Chen et al., 2023)	Stress in Indian higher education	JD-R Model	Quantitative and qualitative approach
Liu et al. (2022)	Job insecurity and mental health	COR Theory	Structural Equation Modeling (SEM)
Zhao et al. (2022)	Administrative workload and burnout	JD-R Model	Regression analysis
Xu et al. (2022)	Work environment and faculty well-being	COR Theory	Survey and qualitative feedback
Huang & Yin (2020)	Emotional intelligence and burnout	Emotional Intelligence Theory	Experimental study

From Table 2, it shows the theories used by past literature relating to Mental Health. This study integrates COR Theory and the JD-R Model, providing a more holistic perspective on the determinants affecting teacher mental health. COR Theory explains how continuous resource depletion such as excessive workloads and job insecurity that leads to burnout (Hobfoll, 1989). In contrast, the JD-R Model categorizes stressors into job demands (e.g., teaching load, student behavior) and job resources (e.g., job security, work environment), offering a structured way to assess their impact on well-being (Bakker & Demerouti, 2007). By applying these theories, this study systematically examines how teaching load, administrative duties, work environment, job security, and student behavior contribute to teacher burnout and mental health outcomes. Teaching load and administrative work represent resource-depleting factors in COR Theory, while job security and work environment serve as protective factors that mitigate stress under the JD-R Model. Student behavior is also a critical determinant, influencing emotional stress and

burnout levels. This theoretical integration strengthens the study's contribution to the academic field by filling the gap left by previous research.

2.3 Teaching Load

Teaching load. Heavy instructional duties in Shandong's private universities, often 20–25 classroom hours/week plus prep, grading, advising, and research (vs. ~15 national average), drain time and energy, elevating fatigue, stress, and reduced efficacy(Bureau, 2022; Zhong et al., 2009). Empirical studies link higher loads to greater emotional exhaustion and burnout among Chinese university teachers (Chen, 2020; Zhang, 2021).

2.4 Administrative responsibilities.

Non-teaching tasks , curriculum work, advising, meetings, reporting, average ~12 hours/week in Shandong's private institutions, crowding out teaching and research, creating role conflict, and heightening strain (Bureau, 2022; Zhang, 2021). Such burdens reliably predict stress, emotional exhaustion, and lower job satisfaction (Chen, 2020; Zhong et al., 2009).

2.5 Work environment.

Resource-constrained settings, limited teaching aids, research facilities, and mental-health supports, are a major stress source; 47% of private-university educators in Shandong report environment-related stress(Bureau, 2022; Chen, 2020). Poor conditions are tied to emotional exhaustion and turnover, whereas supportive climates buffer demands and aid retention (Zhong et al., 2009).

2.6 Job security.

Short contracts and performance-driven evaluations undermine stability; 62% of teachers express insecurity, which elevates stress and weakens commitment (Huang, 2023; Zhang, 2021). Job insecurity is consistently associated with anxiety and emotional exhaustion, underscoring the need for policies that strengthen retention and institutional effectiveness (Huang, 2023).

2.7 Student behavior.

Large classes and diverse needs amplify classroom-management demands; 45% of teachers identify disruptive behavior as a major stressor (Bureau, 2022). Disruptive climates correlate with higher emotional exhaustion and depersonalization, making behavior supports pivotal to reducing teacher stress and sustaining effective teaching (Jennings & Greenberg, 2009).

2.8 Mental Health of Teachers in China

Teacher mental health encompasses emotional, psychological, and social well-being. Poor mental health among educators affects not only their personal lives but also their professional effectiveness(Yang et al., 2019).

Table 3. Past Literature on Teachers' Mental Health

Study	Focus	Findings
(Yang et al., 2019)	Teacher mental health in China	Increased rates of hostility and depressive symptoms among teachers.

(Zhong et al., 2009)	Stress and burnout in Chinese teachers	Burnout significantly impacts teacher mental health and job satisfaction.
(Yang et al., 2019)	Teacher mental health in China	Increased rates of hostility and depressive symptoms among teachers.
(Zhong et al., 2009)	Stress and burnout in Chinese teachers	Burnout significantly impacts teacher mental health and job satisfaction.
(Liu, 2024)	Work-related stress among Chinese educators	High levels of stress correlate with reduced job satisfaction and well-being.
(Huang, 2023)	Emotional intelligence and burnout	Teachers with high emotional intelligence report lower burnout levels.
(Chen, 2020)	Cultural impacts on teacher stress	Hierarchical structures exacerbate psychological distress among educators.
(Zhang, 2021)	Impact of administrative duties	Administrative overload is a leading cause of burnout among educators.
(Luo, 2022)	Teaching during COVID-19	Increased stress and anxiety due to online teaching and lack of preparedness.
(Wu, 2019)	Effects of disruptive student behavior	Poor classroom behavior linked to emotional exhaustion in teachers.

Based on the reviewed studies , table 3, it is evident that teacher stress, burnout, and mental health challenges are critical issues in the academic profession, particularly in the context of China's education sector. Although existing research has investigated various dimensions of these issues, such as teaching workload (Wang, 2021) and administrative responsibilities (Zhao, 2022) , there remains a significant gap in understanding how these factors interact within the unique environment of private tertiary institutions in Shandong, China. Specifically, limited studies have explored the mediating role of job stress and burnout in the relationship between institutional demands and mental health outcomes among teachers in private universities (Liu, 2024). Furthermore, most research focuses on public institutions or generalized educational settings, leaving the distinctive challenges of private university educators underexamined (Chen & Huang, 2016). This gap highlights the urgent need for a focused study to comprehensively analyze the relationships between teaching load, administrative duties, job security, work environment, and student behavior with stress, burnout, and mental health outcomes. By addressing these gaps, table 4, the current study aims to contribute actionable insights to enhance teacher well-being in private tertiary education.

Table 4. Table of Research Gaps

Variable	Existing Research Focus	Gap Identified
Teaching Load	Linked to stress and burnout	Limited focus on private tertiary institutions in Shandong.
Administrative Duties	Shown to increase emotional exhaustion	Lack of exploration in resource-constrained private universities.
Work Environment	Emphasized in public institutions	Few studies address its role in private university contexts.
Job Security	Associated with psychological distress	Insufficient data on contract stability in Shandong private universities.
Student Behavior	Examined as a stressor in general education settings	Minimal research on its impact in higher education institutions.

2.9 Conceptual Framework

The research framework for this study is grounded in the Conservation of Resources (COR) theory (Hobfoll, 1989, 2011) and the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007). Together, these theories provide a comprehensive foundation for examining the factors contributing to teacher stress, burnout, and mental health in private tertiary institutions in Shandong, China. These frameworks emphasize the dynamic interplay between job demands, resources, and employee well-being, illustrating how resource depletion can lead to stress and burnout and ultimately affect mental health outcomes. The independent variables in this study include teaching load, administrative responsibilities, working environment, job security, and student behavior. These factors represent key job demands faced by teachers in private universities, placing substantial strain on their physical, emotional, and psychological resources. For example, heavy teaching loads require sustained time and effort, leading to emotional exhaustion (Chen, 2020). Administrative responsibilities, such as curriculum planning and institutional reporting, detract from teaching and research activities, further contributing to resource depletion. Similarly, a poor working environment, characterized by inadequate facilities and limited collegial support, exacerbates stress levels (Zhao, 2022). Challenges in managing disruptive student behavior also amplify emotional strain, reducing job satisfaction and personal well-being (Jennings & Greenberg, 2009). The dependent variable, mental health outcomes, reflects the overall well-being of teachers, encompassing emotional, psychological, and physical health dimensions. Stress and burnout serve as mediating variables, illustrating the pathway through which job demands influence mental health. Stress represents the immediate response to excessive demands, while burnout manifests as a chronic state characterized by emotional exhaustion, depersonalization, and reduced personal efficacy (Maslach, 2018). These mediators are critical for understanding how job demands translate into adverse mental health outcomes, aligning with the health impairment process central to the JD-R model (Bakker & Demerouti, 2007). The COR theory emphasizes resource conservation and loss cycles, highlighting how resource depletion triggers stress and burnout. Meanwhile, the JD-R model introduces a dual pathway of health impairment and motivation, explaining how high job demands and insufficient resources lead to burnout, while adequate resources buffer these effects and promote engagement. By integrating these theories, this framework not only elucidates the complex relationships between job demands, resources, stress, burnout, and mental health outcomes but also offers a theoretical foundation for designing interventions. This framework provides the basis for empirical investigation into the challenges faced by teachers in Shandong's private tertiary institutions. It aims to test direct and indirect relationships between job demands, stress, burnout, and mental health outcomes, offering insights into targeted interventions to reduce teacher stress and enhance well-being.

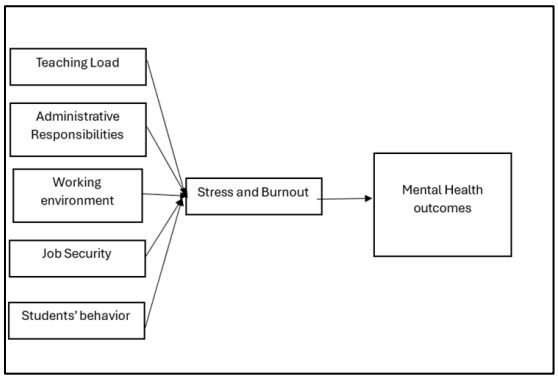

Figure 2. Conceptual Framework

2.10 Hypothesis Development

The study focuses on direct relationships between independent variables (teaching load, administrative responsibilities, working environment, job security, and student behavior) and stress and burnout, as well as their indirect impact on mental health outcomes through the mediating role of stress and burnout. These hypotheses aim to elucidate the mechanisms driving teacher well-being in Shandong's private tertiary institutions.

H1: Teaching load has a significant positive relationship with stress and burnout.

H2: Administrative responsibilities significantly influence stress and burnout.

H3: The working environment significantly affects stress and burnout.

H4: Job security significantly impacts stress and burnout.

H5: Student behavior significantly influences stress and burnout.

H6: Stress and burnout significantly influence mental health outcomes.

Bakker and Demerouti (Bakker & Demerouti, 2007) argued that excessive teaching responsibilities deplete resources, leading to stress and burnout, which subsequently affect mental health outcomes. Chen and Li (Chen, 2020) confirmed the mediating role of burnout in the relationship between teaching load and mental health. Therefore, the following hypothesis is proposed:

H7: Stress and burnout mediate the relationship between teaching load and mental health outcomes.

H8: Stress and burnout mediate the relationship between administrative responsibilities and mental health outcomes.

H9: Stress and burnout mediate the relationship between the working environment and mental health outcomes.

H10: Stress and burnout mediate the relationship between job security and mental health outcomes.

H11: Stress and burnout mediate the relationship between student behavior and mental health outcomes.

3. Research Methodology

This study employs a quantitative, cross-sectional design to test theoretically specified relationships among job demands/resources, stress, burnout, and teachers' mental-health outcomes in Shandong's private universities. The model is grounded in Conservation of Resources (COR), stress emerging from threatened or lost resources, and the Job Demands Resources (JD-R) framework, health-impairment effects of chronic demands in the absence of adequate resources (Bakker & Demerouti, 2007; Hobfoll, 1989). A positivist paradigm guides objective measurement and hypothesis testing for generalizable inference. Data are collected via a structured questionnaire covering the independent variables (teaching load, administrative responsibilities, work environment, job security, student behavior), mediators (job stress, burnout), and the dependent construct (mental health). Items draw on validated scales, Teacher Stress Inventory (TSI), Maslach Burnout Inventory (MBI), and DASS-21—adapted to the local context, rated on Likert scales, and vetted through expert review for content/face validity (Maslach, 2018). Translation and back-translation procedures ensure linguistic equivalence, and the survey is fielded both online and in person to maximize coverage. The population comprises university teachers in private tertiary institutions in Shandong. The unit of analysis is the individual teacher, allowing fine-grained assessment of how institutional demands map onto personal strain and well-being. To enhance representativeness, the study uses stratified random sampling by discipline/experience. A priori power analysis (six predictors, α=.05, medium effect f^2=.15, power=.95) recommends a minimum sample near N≈146; a target of ~N=300 is set to offset nonresponse and support model complexity. Questionnaires are deployed over 6–8 weeks with timed reminders. Completed returns are screened for completeness and consistency prior to analysis; any clarifications are handled according to a predefined protocol. Analyses are conducted in SPSS (descriptives) and SmartPLS (PLS-SEM). Descriptive statistics summarize demographics and study variables. Reliability/validity checks include Cronbach's α and Composite Reliability (CR), convergent validity via AVE, and discriminant validity via Fornell–Larcker and HTMT criteria, with cross-loadings inspected for item purity. The PLS-SEM structural model estimates direct and mediated paths (stress/burnout as mediators), reporting standardized β, t, p, coefficient of determination (R^2), effect sizes (f^2), and predictive relevance **(Q^2)** via blindfolding. Collinearity is assessed with VIF (target < 3), and outliers are diagnosed using boxplots, Mahalanobis distance, and influence diagnostics; extreme cases are examined and, where justified, transformed or excluded with rationale documented. Prior to fieldwork, ethics approval is obtained. Participation is voluntary with informed consent; data are anonymous/confidential, stored securely for academic use only, and procedures are designed to minimize risk, consistent with principles of beneficence, non-maleficence, and justice.

4. Data Analysis and Results

Data Analysis and Results, preserving the key findings, statistics, and the most decision-critical tables/figures. Construct labels: TL (Teaching Load), AR (Administrative Responsibilities), WE (Working Environment), JS (Job Security), STB (Students' Behavior), SB (Stress & Burnout), MHO (Mental Health Outcomes). It reports a PLS-SEM analysis of N=300 university teachers in Shandong's private tertiary institutions, examining (i) how TL, AR, WE, JS, and STB predict SB;

(ii) how SB affects MHO; and (iii) whether SB mediates links between job demands/resources and MHO. The workflow follows best practice: data preparation → measurement model (reliability/validity) → structural model (paths, R^2, f^2, Q^2) → mediation (bootstrapping).

4.1 Data Preparation & Preliminary Diagnostics

- Coding & Editing : online questionnaire data were cleaned and coded and imported to SPSS 29 and SmartPLS.
- Missing data: missingness was <5% across variables; mean substitution was used given randomness and low prevalence.
- Outliers (Mahalanobis D^2): with a conservative $p \leq .001$ criterion, no cases exceeded the threshold, Case 134 showed a relatively high D^2 but p=.002 and was retained, leaving N=300 for analysis , Table 4.

Table 4. Multivariate Outliers Detected Using Mahalanobis D^2

No.	Case ID	Mahalanobis D^2	p-value
1	134	19.75289	> 0.001

- Normality: univariate skewness/kurtosis fell within ±2 (parametric-analysis acceptable). Example: SB skew = –1.101, kurtosis = 0.900; WE skew = 0.316, kurtosis = –1.461, Table 5.

Table 5. Skewness and Kurtosis for All Constructs

Construct	Code	Mean	Std. Dev.	Skewness	Kurtosis
Teaching Load	TL	3.5433	1.16360	-0.342	-0.763
Administrative Responsibilities	AR	3.0407	1.16232	-0.072	-0.718
Students' Behavior	STB	4.2193	0.91704	-1.194	0.961
Working Environment	WE	2.6180	1.51128	0.316	-1.461
Job Security	JS	3.8344	1.08210	-0.562	-0.495
Stress and Burnout	SB	4.3517	0.56313	-1.101	0.900
Mental Health Outcomes	MHO	4.0611	0.96846	-1.064	0.723

TL = Teaching Load, AR = Administrative Responsibilities, STB = Students' Behavior, WE = Working Environment, JS = Job Security, SB = Stress and Burnout, MHO = Mental Health Outcomes.

- Multicollinearity (correlations & VIF): Inter-predictor r values were moderate and <.85; highest observed (example) JS–SB r=.676 remained below redundancy thresholds , Table 6. VIF values were all <3 (max SB=2.857) indicating low collinearity risk , Table 7.

Table 6. Pearson Correlation Matrix for Independent Variables

Constructs	MOH	TL	AR	STB	WE	JS	SB
MOH	1.000						
TL	0.510	1.000					
AR	0.471	0.478	1.000				
STB	0.459	0.238	0.257	1.000			
WE	0.476	0.436	0.348	0.245	1.000		
JS	0.676	0.495	0.398	0.515	0.446	1.000	
SB	0.198	0.137	0.111	0.204	0.234	0.183	1.000

Table 7. Variance Inflation Factor (VIF) Values for Predictor Variables

Construct	Code	VIF
Teaching Load	TL	1.423
Administrative Responsibilities	AR	1.534
Students' Behavior	STB	1.466
Working Environment	WE	1.504
Job Security	JS	2.126
Stress and Burnout	SB	2.857
Mental Health Outcomes	MHO	1.807

4.2 Descriptive Statistics (Respondents)

The N=300 sample was gender-balanced (52.33% male; 47.67% female); academic ranks: Assistant Professor 42.33%, Associate 24.00%, Lecturer 19.33%, Professor 14.33%. Permanent contracts 64.33% vs temporary 35.67%. Age: 30–39 39.33%, 40–49 43.67%; experience: 10–14 years 31.67% , Table 8.

Table 8. Demographic Summary of Respondents (N = 300)

Demographic Variable	Category	Count	Percentage (%)
Gender	Male	157	52.33%
	Female	143	47.67%
	Total	300	100.00%
Academic Rank	Lecturer	58	19.33%
	Assistant Professor	127	42.33%
	Associate Professor	72	24.00%
	Professor	43	14.33%
	Total	300	100.00%
Type of Institution	Public	212	70.67%
	Private	88	29.33%
	Total	300	100.00%
Contract Type	Permanent	193	64.33%
	Temporary	107	35.67%
	Total	300	100.00%
Age Group	20–29 years	23	7.67%
	30–39 years	118	39.33%
	40–49 years	131	43.67%
	50–59 years	24	8.00%
	60–69 years	2	0.67%
	Total	300	100.00%
Years of Teaching	0–4 years	29	9.67%

5–9 years	63	21.00%
10–14 years	95	31.67%
15–19 years	63	21.00%
20+ years	36	12.00%
Total	300	100.00%

4.3 Measurement Model

- Approach: reliability (α, CR), convergent validity (loadings, AVE), and discriminant validity (Fornell–Larcker, HTMT, cross-loadings) were evaluated before structural testing. (see Figure 3 outline and Figure 4 measurement model).

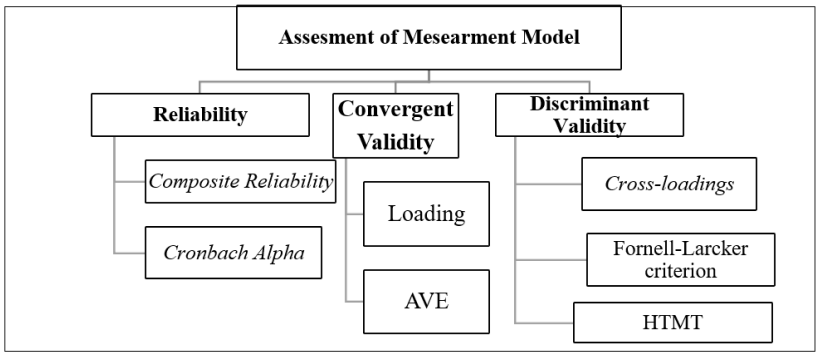

Figure 3. Assessment of the Measurement Model Outline

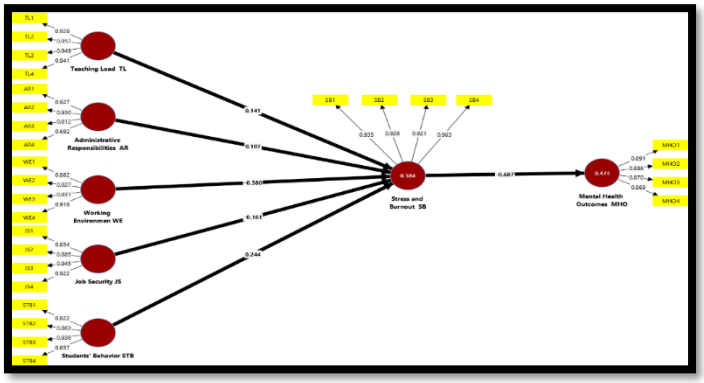

Figure 4. The Measurement Model

- Reliability: all constructs exceeded conventional thresholds: α ranged 0.875–0.959; CR ranged 0.905–0.964, Table 9.

Table 9. Construct Reliability – Cronbach's Alpha and Composite Reliability

Construct	Code	Cronbach's Alpha (≥0.70)	Composite Reliability (≥0.70)
Administrative Responsibilities	AR	0.875	0.961
Job Security	JS	0.923	0.928

Mental Health Outcomes	MHO	0.902	0.905
Stress and Burnout	SB	0.953	0.956
Students' Behavior	STB	0.893	0.897
Teaching Load	TL	0.959	0.964
Working Environment	WE	0.930	0.934

- Convergent validity: standardized loadings mostly >.70 (lowest AR4=0.692); all AVE ≥ .50 (range .716–.891), supporting convergence, Tables 10 and 11.

Table 10. Standardized Factor Loadings by Construct

Item	AR	JS	MHO	SB	STB	TL	WE
AR1	0.927						
AR2	0.930						
AR3	0.812						
AR4	0.692						
JS1		0.854					
JS2		0.885					
JS3		0.945					
JS4		0.922					
MHO1			0.891				
MHO2			0.886				
MHO3			0.870				
MHO4			0.869				
SB1				0.935			
SB2				0.926			
SB3				0.921			
SB4				0.963			
STB1					0.822		
STB2					0.863		
STB3					0.938		
STB4					0.857		
TL1						0.928	
TL2						0.957	
TL3						0.949	
TL4						0.941	
WE1							0.862
WE2							0.927
WE3							0.931
WE4							0.916

Table 11. Convergent Validity – Average Variance Extracted (AVE)

Construct	Code	Cronbach's Alpha	Composite Reliability	AVE (≥ 0.50)
Administrative Responsibilities	AR	0.875	0.961	0.716
Job Security	JS	0.923	0.928	0.814
Mental Health Outcomes	MHO	0.902	0.905	0.773
Stress and Burnout	SB	0.953	0.956	0.877
Students' Behavior	STB	0.893	0.897	0.759
Teaching Load	TL	0.959	0.964	0.891

Working Environment	WE	0.930	0.934	0.827

- Discriminant validity.
  - Fornell–Larcker: square roots of AVE exceeded inter-construct correlations √AVE_SB=0.936, higher than any SB correlation).
  - HTMT: all <.85 , highest JS–WE=0.847, still acceptable.
  - Cross-loadings: each item loaded highest on its intended construct, Tables 12, 13, 14). Collectively, the measurement model exhibits strong psychometrics suitable for hypothesis testing.

Table 12. Discriminant Validity – Fornell–Larcker Criterion

Construct	1	2	3	4	5	6	7
1.Administrative Responsibilities	**0.846**						
2. Job Security	0.377	**0.902**					
3. Mental Health Outcomes	0.532	0.554	**0.879**				
4. Stress and Burnout	0.465	0.511	0.687	**0.936**			
5. Students' Behavior	0.325	0.470	0.511	0.551	**0.871**		
6. Teaching Load	0.521	0.434	0.563	0.504	0.272	**0.944**	
7. Working Environment	0.458	0.785	0.701	0.708	0.533	0.536	**0.909**

Table 13. Discriminant Validity – HTMT Ratios

Construct	1	2	3	4	5	6	7
1. Administrative Responsibilities							
2. Job Security	0.377						
3. Mental Health Outcomes	0.559	0.605					
4. Stress and Burnout	0.461	0.543	0.737				
5. Students' Behavior	0.338	0.519	0.567	0.596			
6. Teaching Load	0.549	0.457	0.602	0.524	0.289		
7. Working Environment	0.459	0.847	0.761	0.750	0.587	0.562	

Table 14. Discriminant Validity – Cross-Loadings

	AR	JS	MHO	SB	STB	TL	WE
AR1	0.927	0.362	-0.506	0.458	0.318	0.476	-0.437
AR2	0.930	0.424	-0.548	0.504	0.340	0.515	-0.513
AR3	0.812	0.229	-0.380	0.304	0.231	0.411	-0.286
AR4	0.692	0.146	-0.264	0.170	0.131	0.313	-0.178
JS1	0.287	0.854	-0.460	0.414	0.442	0.329	-0.656
JS2	0.315	0.885	-0.518	0.456	0.427	0.341	-0.709
JS3	0.383	0.945	-0.487	0.474	0.431	0.435	-0.737
JS4	0.367	0.922	-0.533	0.495	0.401	0.452	-0.729
MHO1	-0.497	-0.461	0.891	-0.618	-0.462	-0.469	0.574
MHO2	-0.523	-0.502	0.886	-0.581	-0.481	-0.413	0.607

MHO3	-0.379	-0.455	0.870	-0.557	-0.386	-0.520	0.584
MHO4	-0.465	-0.527	0.869	-0.652	-0.463	-0.571	0.692
SB1	0.445	0.494	-0.667	0.935	0.551	0.465	-0.674
SB2	0.436	0.442	-0.639	0.926	0.479	0.501	-0.650
SB3	0.414	0.467	-0.581	0.921	0.496	0.432	-0.626
SB4	0.446	0.508	-0.682	0.963	0.536	0.487	-0.699
STB1	0.272	0.396	-0.434	0.460	0.822	0.196	-0.432
STB2	0.268	0.404	-0.473	0.508	0.863	0.304	-0.471
STB3	0.304	0.441	-0.443	0.503	0.938	0.254	-0.498
STB4	0.290	0.394	-0.428	0.445	0.857	0.184	-0.455
TL1	0.492	0.356	-0.512	0.420	0.213	0.928	-0.446
TL2	0.518	0.412	-0.529	0.497	0.268	0.957	-0.503
TL3	0.451	0.422	-0.523	0.475	0.265	0.949	-0.508
TL4	0.506	0.443	-0.559	0.504	0.273	0.941	-0.556
WE1	-0.368	-0.681	0.599	-0.578	-0.507	-0.412	0.862
WE2	-0.423	-0.726	0.670	-0.671	-0.512	-0.474	0.927
WE3	-0.420	-0.725	0.588	-0.641	-0.475	-0.479	0.931
WE4	-0.450	-0.724	0.688	-0.679	-0.451	-0.573	0.916

4.4 Structural Model

Method. PLS-SEM with 1,000-resample bootstrapping estimated path significance; quality assessed via R^2, f^2, Q^2 , Figures 5 and 6.

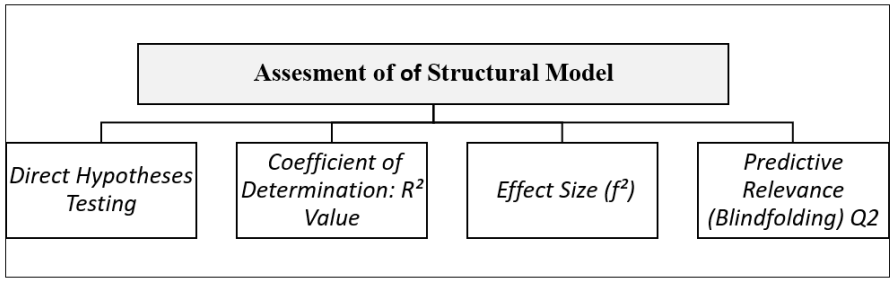

Figure 5. Assessment of the Structural Model Outline

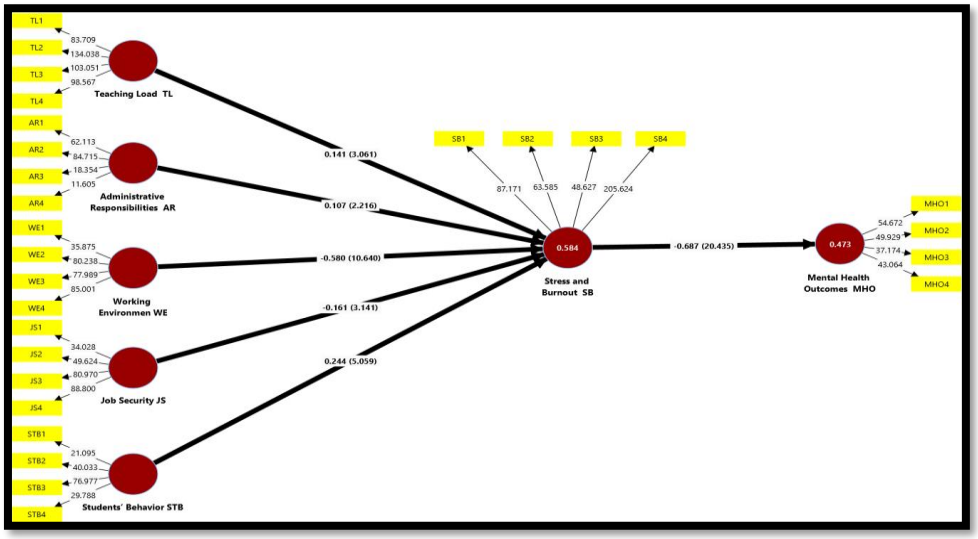

Figure 6. PLS bootstrapping (T Statistics and Path Coefficients)

4.4.1 Direct Effects (H1–H6)

All hypothesized direct paths were significant ($p<.05$), with directions consistent with JD-R/COR theory , Table 15 Key effects:

- WE → SB: $\beta=-0.580$, $t=10.640$, $p<.001$ (largest protective effect)
- STB → SB: $\beta=0.244$, $t=5.059$, $p<.001$
- JS → SB: $\beta=-0.161$, $t=3.141$, $p=.002$
- TL → SB: $\beta=0.141$, $t=3.061$, $p=.002$
- AR → SB: $\beta=0.107$, $t=2.216$, $p=.027$
- SB → MHO: $\beta=-0.687$, $t=20.435$, $p<.001$ (strong adverse effect on mental health)

Table 15. Summary of Direct Effects

Hypos	Relationship	β	t-value	p-value	Decision
H1	Teaching Load → Stress and Burnout	0.141	3.061	0.002	Supported
H2	Administrative Responsibilities → SB	0.107	2.216	0.027	Supported
H3	Working Environment → SB	–0.580	10.640	0.000	Supported
H4	Job Security → SB	–0.161	3.141	0.002	Supported
H5	Students' Behavior → SB	0.244	5.059	0.000	Supported
H6	Stress and Burnout → Mental Health Outcomes	–0.687	20.435	0.000	Supported

4.4.2 Explanatory Power (R^2)

The model explains 58.4% of variance in SB and 47.3% in MHO, both substantial by conventional benchmarks , Table 16.

Table 16. R^2 Values for Endogenous Constructs

Endogenous Construct	R^2	Interpretation (Cohen, 1988)
Stress and Burnout	0.584	Substantial
Mental Health Outcomes	0.473	Substantial

4.4.3 Effect Sizes (f^2)

Effect sizes highlight substantive contributions, Table 17:

- WE → SB: f^2=0.246 (medium)
- STB → SB: f^2=0.100 (small–medium)
- TL → SB: f^2=0.030 (small)
- JS → SB: f^2=0.024 (small)
- AR → SB: f^2=0.019 (small)
- SB → MHO: f^2=0.896 (large)

Table 17. Effect Size (f^2) of Predictor Variables

Hypos	Relationship	β	t-value	p-value	f^2	Interpretation
H1	Teaching Load → Stress and Burnout	0.141	3.061	0.002	0.030	Small
H2	Administrative Responsibilities → SB	0.107	2.216	0.027	0.019	Small
H3	Working Environment → SB	–0.580	10.640	0.000	0.246	Medium
H4	Job Security → SB	–0.161	3.141	0.002	0.024	Small
H5	Students' Behavior → SB	0.244	5.059	0.000	0.100	Small to Medium
H6	Stress and Burnout → Mental Health Outcomes	–0.687	20.435	0.000	0.896	Large

4.4.4 Predictive Relevance (Q^2)

Blindfolding produced large predictive relevance for both endogenous constructs: Q^2_SB = 0.504
and Q^2_MHO = 0.359. Table 18, indicating strong out-of-sample predictive capability.

Table 18. Predictive Relevance (Q^2) for Endogenous Constructs

Construct	Q^2 Value	Interpretation
Stress and Burnout	0.504	Large
Mental Health Outcomes	0.359	Large

4.5 Mediation (SB as Mechanism)

Bootstrapped (1,000 resamples) indirect effects confirmed SB as the central mechanism translating job conditions into mental health outcomes: all five mediated paths were significant, table 19. The strongest indirect pathway was WE → SB → MHO (β_ind=0.398, t=9.632, p<.001), underscoring the pivotal role of workplace conditions in shaping psychological well-being via stress/burnout. Additional significant indirect effects:

- STB → SB → MHO: β_ind=–0.168, t=4.886, p<.001
- TL → SB → MHO: β_ind=–0.097, t=3.047, p=.002
- AR → SB → MHO: β_ind=–0.074, t=2.179, p=.030
- JS → SB → MHO: β_ind=0.111, t=3.236, p=.001

These findings validate the theorized health-impairment process: demands/resources act primarily indirectly on mental health by altering stress/burnout levels.

Table 19. Mediation Analysis Using Bootstrapping (1,000 Resamples)

Hypothesized Pathway	Indirect Effect (β)	*t*-value	*p*-value	Decision
Students' Behavior → Stress and Burnout → Mental Health Outcomes	–0.168	4.886	0.000	Supported
Teaching Load → Stress and Burnout → Mental Health Outcomes	–0.097	3.047	0.002	Supported
Working Environment → Stress and Burnout → Mental Health Outcomes	0.398	9.632	0.000	Supported
Administrative Responsibilities → Stress and Burnout → MHO	–0.074	2.179	0.030	Supported
Job Security → Stress and Burnout → Mental Health Outcomes	0.111	3.236	0.001	Supported

4.6 Interpretation & Takeaways

Most influential upstream lever on SB: Working Environment (WE) (β=–.580; f^2=.246). Enhancing resource adequacy, collegial climate, and institutional supports yields the largest stress reductions. 2) Challenging Students' Behavior (STB) exerts the next-largest positive effect on SB (β=.244; f^2=.100), signaling the need for classroom-management and behavioral-support systems. 3) Job Security (JS) has a significant protective effect (β=–.161), highlighting the buffering role of contract stability. 4) TL and AR are significant but smaller contributors whose cumulative burden remains meaningful. 5) Downstream, SB → MHO is strong and negative (β=–.687; f^2=.896), and SB mediates all job-condition effects on mental health, confirming the central mechanism posited by JD-R/COR. Collectively, R^2, f^2, and Q^2 indices indicate a model with substantial explanatory power and strong predictive relevance for both SB and MHO.

5. Discussion

Guided by Conservation of Resources (COR) and the Job Demands–Resources (JD-R) frameworks, this discussion situates the study's findings on occupational stress, burnout, and mental health in Chinese higher education, with a specific focus on private tertiary institutions in Shandong. Across the three research questions, results converge on a health-impairment process: contextual job demands and deficits in resources elevate stress and burnout, which in turn degrade mental-health outcomes (Bakker & Demerouti, 2018; Maslach & Leiter, 2016).

RQ1: Do teaching load, administrative responsibilities, work environment, job security, and student behavior predict stress/burnout?

All five workplace variables exhibited significant associations with stress/burnout (SB), underscoring the multidimensionality of strain in academic work. The working environment had the largest protective effect ($\beta = -0.580$, $p < .001$), indicating that resource adequacy, collegial climate, and institutional support are pivotal buffers against SB. This accords with evidence that poorly resourced physical and social environments in Chinese private universities heighten emotional exhaustion (Chen & Li, 2020) and dovetails with COR theory: depletion of environmental resources catalyzes loss spirals culminating in burnout. Student behavior emerged as the strongest positive demand ($\beta = 0.244$, $p < .001$). Consistent with research linking disruptive/disengaged classrooms to emotional exhaustion and depersonalization (Jennings &

Greenberg, 2009), the findings suggest that the emotional labor required to manage behavior—especially under resource constraints—meaningfully amplifies stress (Zhang et al., 2021). Job security showed a moderate, statistically significant negative relationship with SB (β = −0.161, p = .002), reinforcing the JD-R proposition that insufficient job resources (e.g., unstable employment) contribute to health impairment (Huang et al., 2020; Qian et al., 2022). Although teaching load (β = 0.141, p = .002) and administrative responsibilities (β = 0.107, p = .027) had smaller effect sizes, their significance signals a cumulative burden that drains time, energy, and attention, aligning with studies on chronic overload and bureaucracy in Chinese universities (Zhong et al., 2009). Taken together, these results validate a JD-R interpretation in which demands (workload, administration, student behavior) and resources (environmental support, job security) jointly shape SB. Rather than a unidimensional outcome, burnout is best viewed as a system-level response to intersecting institutional and psychological pressures.

RQ2: Do stress and burnout predict mental-health outcomes?

The link from SB to mental-health outcomes (MHO) was strong and negative (β = −0.687, p < .001), confirming JD-R's health-impairment pathway and the clinical account of burnout's harms to well-being (Bakker & Demerouti, 2018; Maslach & Leiter, 2016). This estimate is substantively large, suggesting that once SB is elevated, deterioration in mental health is pronounced consistent with reports of depression, anxiety, and reduced emotional stability among faculty facing high loads, precarious contracts, and limited support (Yang et al., 2019; Liu & Onwuegbuzie, 2020). The sociocultural context likely intensifies these dynamics: in Confucian-influenced settings, norms of endurance and face-saving can suppress help-seeking and emotional disclosure, exacerbating the internalization of strain (Chen & Li, 2020). The implication is clear: early identification and prevention of SB are central to protecting mental health, with spillover benefits for instructional quality and institutional productivity.

RQ3: Do stress and burnout mediate the effects of job conditions on mental health?

Mediation analyses showed that SB significantly mediated all five pathways from job conditions to MHO, substantiating the central mechanism implied by COR/JD-R. The working environment again dominated in the mediated chain (β_ind = 0.398, p < .001), implying that environmental enhancements translate into better mental health **via** stress reduction (Chen & Huang, 2016). The student behavior pathway was also substantial (β_ind = −0.168, p < .001), indicating that behavior management challenges are psychologically consequential, especially when institutional supports are thin (Wu & Xie, 2019). Mediation was smaller but significant for teaching load (β_ind = −0.097, p = .002), administrative responsibilities (β_ind = −0.074, p = .030), and job security (β_ind = 0.111, p = .001). These patterns are theoretically coherent: demands (TL, AR, STB) elevate SB, which then harms MHO, while resources (WE, JS) attenuate SB and indirectly protect MHO. In short, stress/burnout is the conduit through which the institutional architecture affects psychological outcomes.

Theoretical implications

The findings affirm the applicability of COR and JD-R in Chinese private higher education. First, they substantiate COR's claim that resource loss here, deficits in environmental support and job

stability drives strain and burnout. Second, they operationalize the JD-R distinction between demands (TL, AR, STB) and resources (WE, JS), and demonstrate the model's dual-process mechanism by which resources buffer the health-impairment path. Importantly, situating these models in a Confucian cultural context highlights how hierarchical expectations and norms of emotional restraint can magnify stress processes, extending the frameworks' relevance in East Asian academic settings (Chen, 2020).

Practical implications for institutions

Three priorities follow. (1) Environment first. Because WE shows the largest direct and indirect effects, investments in infrastructure, teaching aids, collegial climates, and professional development are likely to yield the greatest stress reductions. (2) Manage the chronic load. Workload calibration (e.g., course caps, protected prep time) and administrative streamlining (delegation, support staff, process redesign) address persistent but tractable sources of SB. (3) Stabilize employment. Longer contracts, transparent appraisals, and clear promotion pathways reduce insecurity, indirectly protecting mental health. A complementary priority is classroom-management capacity—training in conflict resolution and emotional regulation—to mitigate the SB induced by challenging student behavior (Jennings & Greenberg, 2009). Institutions should also offer accessible counseling and peer-support programs, normalizing help-seeking in culturally sensitive ways.

Policy implications

At system level, the results argue for faculty well-being metrics in quality assurance and accreditation. Policymakers can incentivize private institutions to report and improve on work environment, workload, and support services, and supply targeted funding to address structural shortfalls. Evidence-based norms for teaching hours, student–teacher ratios, and limits on non-teaching duties would help keep demands within manageable bounds. Given stigma, public communication that destigmatizes mental-health care in academic workplaces is also warranted.

6. Conclusion

This study examined the complex interplay between occupational stressors, stress and burnout, and mental health outcomes among university teachers in private tertiary institutions in Shandong, China. Drawing upon the Conservation of Resources (COR) theory and the Job Demands-Resources (JD-R) model, the study systematically investigated both the direct and indirect effects of five key workplace factors—teaching load, administrative responsibilities, working environment, job security, and student behavior—on the psychological well-being of academic staff. The findings revealed that all five workplace variables exert significant direct effects on stress and burnout. Among these, the working environment and student behavior were identified as the most influential stressors. In turn, stress and burnout demonstrated a strong negative impact on mental health outcomes, highlighting the detrimental consequences of prolonged occupational strain. Furthermore, mediation analysis confirmed that stress and burnout significantly mediate the relationships between each workplace factor and mental health, substantiating the theoretical claim that environmental demands and supports exert their psychological influence primarily through the mechanism of perceived strain. The study offers

several important theoretical contributions. It empirically validates the COR and JD-R frameworks within the unique socio-cultural context of Chinese private higher education, expanding their applicability to non-Western academic settings. Additionally, the study contributes to a deeper understanding of how workplace conditions, shaped by institutional and cultural dynamics, influence the mental health of educators. From a practical perspective, the findings underscore the urgency for institutional reforms that address systemic stressors, including heavy teaching loads, administrative overload, insecure employment, and unsupportive environments. Addressing these challenges through targeted interventions—such as workload management, faculty support services, and mental health initiatives—can significantly enhance teacher well-being, job satisfaction, and institutional performance. At the policy level, the study advocates for integrating faculty mental health into national educational quality standards and providing regulatory and financial support to improve working conditions in private institutions. A culture of openness, psychological safety, and proactive support is essential to sustaining academic excellence in China's rapidly evolving higher education landscape. Despite its contributions, the study acknowledges several limitations, including its cross-sectional design, reliance on self-reported data, and focus on a single province and institutional type. Nevertheless, these limitations offer fruitful directions for future research, which should include longitudinal and comparative designs, incorporate psychological moderators, and adopt mixed methods approaches to gain a more holistic understanding of academic well-being. In conclusion, this study affirms that stress and burnout are not merely individual afflictions, but institutional and structural phenomena. Enhancing the psychological resilience of university educators requires a coordinated response from academic leadership, policymakers, and researchers. As private tertiary education continues to expand in China, safeguarding the mental health of its academic workforce will be essential to ensuring sustainable educational development and quality.

6.1 Recommendations and future research

Institutional action should prioritize environmental improvements, employment stability, load/administration management, behavior-management training, and mental-health services. Future research should adopt longitudinal and mixed-methods designs to track trajectories and capture lived experience; incorporate moderators (emotional intelligence, resilience, social support) to explain heterogeneity; conduct public–private and inter-provincial comparisons to map policy and resource effects; and investigate how digital transformation and post-pandemic pedagogy are reshaping demand/resource profiles in Chinese higher education. The evidence supports a coherent stress process: when demands outpace resources, stress/burnout rises, and mental health declines. Because the working environment and job security exert protective leverage and student behavior and chronic load contribute meaningfully to SB interventions that replenish resources and temper demands are the most promising route to sustainable faculty well-being and institutional effectiveness in Shandong's private tertiary sector.

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Conflicts of Interest

The authors declare no conflicts of interest.

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