



RESEARCH ARTICLE

The Relationship Between Job Stress and Job Satisfaction Among Full-Time Teachers in Public Vocational Colleges in Western Guangdong, China

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This study aims to examine the impact of job stress (including teaching stress, research stress, and administrative pressure) on job satisfaction among teachers in public vocational colleges in western Guangdong, China. Data were collected through a questionnaire survey targeting teachers in public vocational colleges in the region. This study is grounded in a positivist research philosophy and adopts a quantitative research approach to ensure objectivity and generalizability (Creswell, 2014). Quantitative analysis was conducted using SPSS and Smart-PLS software. A structured questionnaire was designed to measure teaching stress, research stress, administrative pressure, and job satisfaction, and a simple random sampling method was employed to select participants. To ensure data quality, reliability and validity tests were performed, followed by data cleaning and preprocessing. Structural equation modeling (SEM) was applied using Smart-PLS software to explore the direct impact of various stressors on job satisfaction. Teaching stress (TS), research stress (RS), administrative pressure (AP) as the independent variables showed that the path coefficient of AP to JS was -0.324 ($t = 6.398, p < 0.000$), TS to JS was -0.267 ($t = 5.016, p < 0.000$), and RS for JS was -0.244 ($t = 4.928, p < 0.000$). This indicates that administrative pressure, teaching pressure and research stress all have significant negative effects on job satisfaction, that is, the greater the pressure, the lower the job satisfaction. This study provides valuable insights into the mechanisms affecting teacher job satisfaction, offering practical implications for policymakers seeking to improve teacher well-being and satisfaction. Additionally, it provides both theoretical and empirical foundations for future research in this field.

INTRODUCTION

In the field of education, teacher job satisfaction has garnered increasing attention, particularly in OECD countries (Organization for Economic Co-operation and Development [OECD], 2019). One key reason is its potential role in retaining high-quality educators (Admiraal & Kittelsen Røberg, 2023; McJames et al., 2023; Madigan & Kim, 2021; Toropova et al., 2021; European Commission, 2021). Both attrition and turnover are linked to declines in student achievement (McJames et al., 2023; OECD, 2014) and can contribute to disparities in teacher quality across different schools (Qin & Bowen, 2019). Notably, disadvantaged schools often face more significant difficulties in attracting and retaining qualified teachers, exacerbating existing inequalities in education (Glassow et al., 2023). From an economic perspective, teacher attrition and turnover represent a considerable waste of resources, as substantial investments are made in training new teachers, only for them to leave the profession prematurely (Sorensen & Ladd, 2020). Addressing these challenges is essential for ensuring a stable, high-quality teaching workforce and improving educational outcomes.

In China, with the rapid development of society and increasing competition, teachers in higher vocational colleges have been facing growing job stress from teaching, research, and administrative responsibilities (Xu, & Wang, 2023). These pressures not only affect their job satisfaction but also have a significant impact on their physical and mental well-being.

Teacher's job satisfaction refers to the overall positive emotional state or attitude of teachers towards their work (Porter, Steers, Mowday, & Boulian, 1974). Previous studies have shown that teachers in Chinese schools generally report low job satisfaction and high turnover intention (Z., & Manly, N., 2024). A study of medical school faculty in southeastern China identified heavy administrative burdens, unclear promotion pathways, and inadequate salaries as major sources of dissatisfaction (Qian & Lacanlala, 2023).

However, the factors influencing teacher job satisfaction in China remain insufficiently explored. In particular, teachers in underdeveloped regions receive limited research attention, despite facing unique challenges that may further impact their job satisfaction and professional well-being. Addressing this gap is crucial for developing targeted policies and institutional strategies to improve teacher retention, job satisfaction, and overall education quality in these regions.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 The Linkage between teaching stress and job satisfaction

Xu & Wang (2023) adopted quantitative research methods to conduct a questionnaire survey on junior college teachers in eastern China, and the results showed that teaching stress was negatively correlated with the life satisfaction of junior college teachers. Life satisfaction and job satisfaction positively influence each other (Judge, T., & Watanabe, S., 1993), and teaching stress is also negatively correlated with college teachers' job satisfaction. (Xu, Y., & Wang, Y., 2023).

Skaalvik, C. (2023) To explore principals' perceptions of job-related needs and resources, and the relationship between perceived job demands and job resources and job satisfaction, emotional exhaustion, and motivation to resign as principals. A study of 340 principals was conducted. Data were analyzed by exploratory and confirmatory factor analysis and SEM analysis using the AMOS 25 program. The results show that job satisfaction is negatively correlated with five job requirements and positively correlated with all job resources. Time pressure and workload invested in teaching are negatively related to job satisfaction. Teaching stress is negatively related to job satisfaction.

Kamil & Olagoke (2023) took public and private primary school teachers as research objects to explore the relationship between teachers' stress and job satisfaction. Cross-sectional survey design and convenient sampling method were adopted. 150 primary school teachers participated in the study. Descriptive analysis, Pearson correlation analysis, independent T-test and other methods were used to analyze the relationship between teacher stress and job satisfaction, as well as the differences between teacher stress and job satisfaction between public primary school teachers and private primary school teachers. The results show that teaching stress is negatively correlated with job satisfaction.

Drawing from these insights, we propose the hypothesis:

H1: Teaching stress has a negative impact on the job satisfaction among full-time teachers at higher vocational colleges in western Guangdong, China.

2.2 The Linkage between Research stress and job satisfaction

Yang Xueyan (2023) explored the mediating roles of research job satisfaction and achievement motivation between research stress and research performance, and found that: teachers in higher education colleges and universities are subject to higher research stress; research stress reduces the research job satisfaction of higher education teachers, and research stress has a negative predictive effect on research job satisfaction (Yang Xueyan, 2023).

Ertas et al. (2023) investigated the impact of journal choice on burnout and jealousy among scholars and analyzed its direct impact on job satisfaction and life satisfaction. Results show

that publication frequency has a negative impact on job satisfaction, and academic promotion has a negative impact on job satisfaction (Ertas, M., Kozak, M., & Kri LAR-Can, B., 2023).

Lv et al. (2022) conducted a questionnaire survey on university researchers in Shandong Province (including those who did not lead the project but actually participated in scientific research). The results show that the requirements of scientific research assessment are too high, and the threshold of promotion is too high, which leads to the pressure of scientific research personnel. Moderate stress can promote the occurrence of positive behaviors and increase the performance output of researchers, while excessive stress can trigger negative psychology and behaviors and reduce job satisfaction (LvJuunegetal., 2022).

Drawing from these insights, we propose the following hypothesis:

H2: Research stress has a negative impact on the job satisfaction among full-time teachers at higher vocational colleges in western Guangdong, China.

2.3 The Linkage between Administrative pressure and job satisfaction

Skaalvik, C. (2023) explores principals' perceptions of job-related needs and resources, and the relationship between perceived job demands and job resources and job satisfaction, emotional exhaustion, and motivation to quit. A study of 340 headteachers was conducted. The results showed that frequent meetings (a dimension of administrative pressure) were negatively associated with job satisfaction.

Xu & Wang (2023) explored the relationship between Administrative pressure and life satisfaction based on a survey. A survey was conducted on junior university teachers in East China, this study adopted a quantitative research methodology, data were collected by questionnaires, 202 valid questionnaires were recovered using the snowball sampling method, and multiple regression analyses and structural equation modelling were used to validate the results of the study. The results showed that Administrative pressure is negatively correlated with job satisfaction of junior college teachers.

Ahmad et al. (2021) explored the impact of emotional exhaustion on the work engagement of academic staff in Malaysian universities. A total of 190 academic administrators from public and private universities in Malaysia participated in the study. Results show that high levels of administrative pressure are associated with an increase in emotional exhaustion, affecting work engagement and overall well-being (Ahmad et al., 2021). Similarly, administrative pressure is negatively related to teachers' job satisfaction.

Building on these findings, we propose the following hypothesis:

H3: Administrative pressure has a negative impact on the job satisfaction among full-time teachers at higher vocational colleges in western Guangdong, China..

3. Hypothesis model

Based on the above assumptions, the researchers put forward the following conceptual framework model, which mainly studies the effects of teaching stress, research stress, administrative pressure and job satisfaction.

Independence Variables : Job stress

- a) Teaching stress
- b) Research stress
- c) Administrative pressure

Dependence Variable: job satisfaction

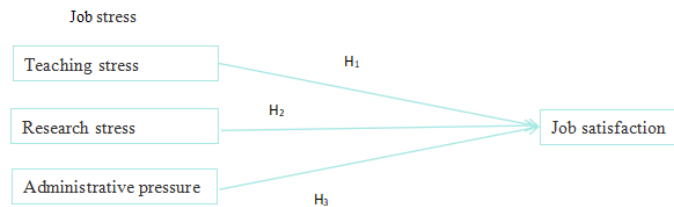


Figure 3.1: Conceptual Framework (Source : Xu & Wang, 2023)

4.RESEARCH METHODOLOGY

4.1 Study sample

Teachers from six public vocational colleges in Western Guangdong, China ,as the sampling frame for this study.

Guangdong Maoming Health Vocational College

Guangdong Maoming Preschool Teachers College

Maoming Vocational and Technical College

Guangdong Maoming Vocational College of Agriculture and Forestry Technology

Zhanjiang Preschool Normal College

Yangjiang Vocational and Technical College

N	S	N	S	N	S
10	10	230	140	1300	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	310	175	2100	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3200	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—N is population size. S is sample size.
Source: Krejcie & Morgan, 1970

According to Krejcie & Morgan(1970), see Figure 4.1. To verify, we also performed a 95% confidence interval (e=0.05) calculation using Raosoft Inc. In a population size of 2500, the sample size (n) is 335. Groves (2005) suggests that when dealing with low response rates or high attrition rates, an oversampling rate of approximately 20% to 50% is typically recommended. Given that the questionnaire was conducted in a controlled school environment, a reasonable 20% was established based on a stable target audience, a convenient survey process, strong organizational support, high willingness to participate, and an effective reminder mechanism. Therefore, a total of 402 questionnaires were distributed in order to achieve the required sample size.

4.2 Sampling Technique

After determining the target population, we choose sampling technique (M, 2002). There are two types of sampling design, one is probabilistic sampling and the other is non-probabilistic sampling. In probability sampling, there is a certain chance or probability that an element will be selected as a sample. In non-probabilistic sampling, the probability of an element being selected as a sample is unknown. In this research, the simple random sampling technique is adopted among higher vocational college teachers in Western Guangdong, China.

Simple random sampling, as a statistical sampling method, has the same probability of each sample unit being selected. Every teacher has the same probability of being selected, which can minimum selection bias in the study (Rahman et al., 2022). The concept and operation of simple random

sampling are relatively simple, which is easy for researchers to understand and apply. It is easy to operate when selecting teachers to fill in the questionnaire, and there will be few deviations. By using simple random sampling, proper sampling, and simple random sampling samples can reflect the overall characteristics well.

4.3 Instrument and measurement

This paper is mainly based on the questionnaire method to collect the data needed for empirical research. The contents of the questionnaire mainly include the following three aspects: the first is the basic situation survey of the respondents, the second is the status survey of teaching stress, research stress and administrative pressure of full-time teachers in higher vocational colleges in the west of Guangdong Province. Finally, the job satisfaction scale of full-time teachers in the west of Guangdong Province. The teaching stress scale, scientific research stress scale and administrative pressure scale in this paper are mainly designed on the basis of the questionnaire compiled by Min Wei (2020), Chen Rui (2020), Lv Jun cheng (2022) et al. To measure Job Satisfaction the scale suggested by Brayfield & Rothe (1951) and shortened by Judge et al. (1998) with 5 items were used.

NO.	Variables	Items	Source
1	Teaching Stress (TS)	I feel a lot of pressure to constantly update the teaching content.	Chen (2020)
2		In order to complete the teaching tasks and arrangements, I often have to reduce the rest time	
3		I've difficulties in enhancing my teaching methods.	
4		The responsibilities as an academic has given me lots of pressure.	
5		I feel a lot of pressure for teaching assessment.	
6		I feel a lot of pressure about the lack of teaching resources.	
7		I feel a lot of pressure on students to participate in classroom activities because of their low enthusiasm.	
8	Research Stress (RS)	I have difficulties in publishing a research paper.	Lv et al. (2022)
9		I have issue to apply grant for research project.	
10		I feel a lot of pressure for research tasks and requirements.	

11		I feel a lot of pressure to spend time and energy on scientific research.	
12		I feel a lot of pressure on the conditions and platforms for conducting research.	
13		I feel a lot of pressure from the lack of support for research.	
14		I feel a lot of pressure about the lack of research funding.	
15	Administrative Pressure (AP)	I feel a lot of pressure for the cumbersome administrative procedures (financial reimbursement).	Min (2020)
16		I feel a lot of pressure to do administrative chores (events, meetings, filling out forms).	
17		I spend a lot of time on administrative tasks rather than teaching or research.	
18		I feel a lot of pressure about the college's heavy bureaucratic management.	
19		I feel a lot of pressure on the rigid procedures of the administration.	
20		I feel a lot of pressure for the unreasonable position setting of the college.	
21		The outdated office equipment affects my work efficiency.	
22		Too many administrative tasks interfere with my teaching and research.	
23		I'm worried abt performance appraisal of my work.	
24	Job Satisfaction (JS)	I feel fairly satisfied with my present job.	Judge et al. (1998), Brayfield and Rothe (1951)
25		Most days I am enthusiastic about my work.	
26		Each day at work seems like it will never end.	

27	I find real enjoyment in my work.
28	I consider my job to be rather unpleasant.

4.4 Survey

This study employed a questionnaire survey method designed using Wenjuanxing (Questionnaire Star) and utilized simple random sampling to collect data from teachers at six public vocational colleges in western Guangdong, China. The data collection period spanned from November to December 2024, during which respondents participated by scanning a QR code to complete the survey.

4.5 Data analysis

After the data collection, the data was first cleaned. After the data was cleaned, a total of 348 valid data remained. smart-pls4.0 was used to further analyze the data and analyze the relationship between variables. To ensure data completeness and accuracy, this study utilized a Star Applet questionnaire. The survey platform was configured to require a response for each question before submission, effectively preventing missing data. As a result, all 348 collected questionnaires were fully completed and valid, with no missing values. This study utilizes Z-scores to identify and manage outliers. A common method for detecting univariate outliers is the use of Z-scores, which measure the deviation of a value from the mean in terms of standard deviations. The typical threshold is $Z > |3.29|$, meaning values beyond this range are considered potential outliers (Tabachnick & Fidell, 2013). In this research, 357 questionnaires were collected, of which 9 were outliers, and only 348 were available. The Z-score of TS1-TS7 shows four outliers with values greater than 3.29. The Z-score for RS1-RS7 shows two outliers. The Z-scores of AD1-AD9 have three outliers. The Z-score of JS1-JS5 has two outliers. After data cleaning and outlier analysis, 348 respondents were valid, and further analysis was conducted.

RESULTS

5.1 Assessment of the measurement model

Model Correction

In this section, the study model was constructed using smart-pls 4.0 to test the fit of the model in this study and to verify the study hypothesis, which contains 4 latent variables and 27 observed variables. According to the model diagram before modification in Figure 1, the factor of TS2S is 0.369 below 0.6, and the factor of RS7s is 0.133 below 0.6, so the revised model diagram of Figure 2 is considered after deleting TS2S and RS7s.

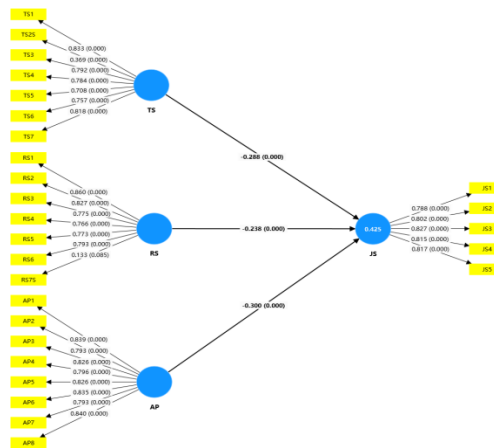


Figure 1. Unmodified model Fig

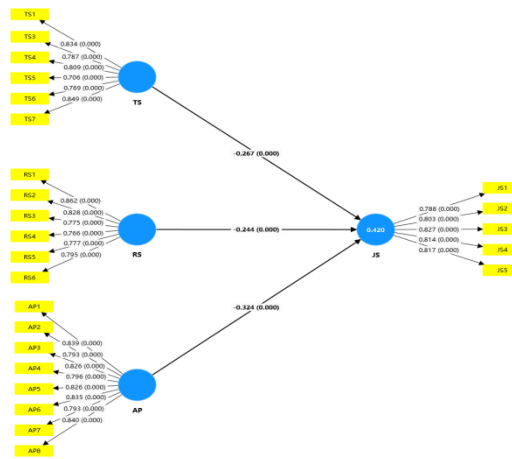


Figure 2 The corrected model plots in Fig

Reliability and Convergent Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
TS	0.882	0.888	0.911	0.630
RS	0.888	0.894	0.915	0.642
AP	0.930	0.933	0.942	0.670
JS	0.869	0.869	0.905	0.656

In this study, multiple indicators were used to assess the reliability and convergent validity of the measurement models. The Cronbach's alpha coefficient was used to measure the internal consistency of the scale, and the Cronbach's alpha coefficient of teaching stress (TS) was 0.882, research stress (RS) was 0.888, administrative pressure (AP) was 0.930, and job satisfaction (JS) was 0.869, all greater than 0.7, indicating good internal consistency of each scale.

Composite reliability (rho_a and rho_c) further verified the reliability of the scale, AP rho_a is 0.933 and rho_c is 0.942; TS's rho_a is 0.888 and rho_c is 0.911; RS rho_a is 0.894 and rho_c is 0.915; JS rho_a is 0.869 and rho_c is 0.905, both greater than 0.8 standard, indicating the high reliability of each scale.

Average variance extraction (AVE) was used to assess convergent validity, with AVE 0.670 for AP, AVE 0.630 for TS, AVE 0.642 for RS, and AVE = 0.656 for JS, both greater than 0.5 criteria, indicating that these structures have good aggregate validity, meaning the scales effectively measure their corresponding concepts.

	R-square	R-square adjusted
JS	0.420	0.415

R-squared represents the proportion of variation in the dependent variable (JS) explained by the model. 0.420 indicates that the model explains 42.0% of the dependent variable variation, and the adjusted r square is 0.415, indicating that the explanatory power of the model has been slightly adjusted, but it still indicates that the model has a good explanatory power.

Discriminant Validity

Discriminant Validity HTMT table

	AP	JS	RS	TS
AP				
JS	0.588			
RS	0.373	0.511		
TS	0.522	0.578	0.404	

In this study, the HTMT values of all variables were less than 0.90, indicating that the discriminant validity of all potential variables was good.

Discriminant Validity Fornell-Larcker criterion table

	AP	JS	RS	TS
AP	0.819			
JS	-0.535	0.810		
RS	0.346	-0.453	0.801	
TS	0.475	-0.509	0.360	0.794

In the Fornell-Larcker criterion table, the values on the diagonal are the square root of the potential variable AVE, 0.819 for AP, 0.794 for TS, 0.801 for RS and JS, 0.810, which are greater than the correlation coefficient for each row and column, indicating good discrimination of the potential variables. The results of the cross-load table show that the load of each observed variable on its own potential variables is higher than that of the other potential variables, which further proves that these variables have good discriminant validity and can clearly distinguish different potential variables.

Discriminant Validity cross loading table

	AP	JS	RS	TS
AP1	0.839	-0.425	0.299	0.425
AP2	0.793	-0.487	0.327	0.408
AP3	0.826	-0.478	0.323	0.407
AP4	0.796	-0.472	0.218	0.352
AP5	0.826	-0.434	0.342	0.419
AP6	0.835	-0.431	0.290	0.403
AP7	0.793	-0.325	0.208	0.331
AP8	0.840	-0.410	0.238	0.347
JS1	-0.412	0.788	-0.356	-0.399
JS2	-0.448	0.803	-0.411	-0.378
JS3	-0.444	0.827	-0.386	-0.411
JS4	-0.445	0.814	-0.326	-0.415
JS5	-0.417	0.817	-0.351	-0.457
RS1	0.362	-0.397	0.862	0.327
RS2	0.291	-0.416	0.828	0.323
RS3	0.249	-0.345	0.775	0.291
RS4	0.223	-0.350	0.766	0.225
RS5	0.216	-0.302	0.777	0.271
RS6	0.305	-0.349	0.795	0.285
TS1	0.404	-0.445	0.320	0.834
TS3	0.423	-0.415	0.316	0.787
TS4	0.365	-0.380	0.249	0.809
TS5	0.356	-0.325	0.246	0.706
TS6	0.343	-0.407	0.315	0.769
TS7	0.369	-0.436	0.263	0.849

As a whole, the load of each observed variable on its own potential variable is higher than that on other potential variables, indicating that these variables have good discriminant validity and can clearly distinguish different potential variables.

5.2 Assessment of the structural model

Path Coefficients

Mean,STDEV, T values, P values

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
AP -> JS	-0.324	-0.323	0.051	6.398	0.000
RS -> JS	-0.244	-0.246	0.050	4.928	0.000
TS -> JS	-0.267	-0.269	0.053	5.016	0.000

Regression analysis with job satisfaction (JS) as the dependent variable, teaching stress(TS),research stress (RS), administrative pressure (AP)as the independent variables

showed that the path coefficient of AP to JS was -0.324 ($t = 6.398$, $p < 0.000$), TS to JS was -0.267 ($t = 5.016$, $p < 0.000$), and RS for JS was -0.244 ($t = 4.928$, $p < 0.000$). This indicates that administrative pressure, teaching pressure and research stress all have significant negative effects on job satisfaction, that is, the greater the pressure, the lower the job satisfaction.

Effect Sizes (f^2)

	f-square
AP -> JS	0.134
RS -> JS	0.085
TS -> JS	0.090

The effect sizes of the respective variables on the dependent variables were calculated, with f^2 0.134 for AP for JS, f^2 0.090 for TS for JS, and f^2 0.085 for RS for JS. According to the judgment criteria of effect size, the effect of AP on JS is large, and the effect of TS and RS on JS is moderate, indicating that administrative pressure has a relatively large impact on job satisfaction, and teaching stress and research stress also have a certain impact on job satisfaction.

Model Fit Indices

SRMR Table

	Original sample (O)
Saturated model	0.052
Estimated model	0.052

The SRMR value of 0.052 indicates a good model fit, below the criterion of 0.08, indicating a high degree of model fit and a small fluctuation range of SRMR values under different sample conditions, further confirming the stability and good fit of the model.

Collinearity Assessment

Collinearity Statistics Iner Model list

	VIF
AP -> JS	1.352
RS -> JS	1.204
TS -> JS	1.368

The VIF values for the job satisfaction variables (AP, RS, TS) were 1.352, 1.204, and 1.368, respectively. All of them are less than 3, indicating that there is no serious multicollinearity problem in the model. The results of the regression analysis using these independent variables are reliable and stable.

6. DISCUSSION AND IMPLICATIONS

The results of the direct relationship analysis indicate that all independent variables (Teaching Stress, Research Stress, and Administrative Pressure) have negative path coefficients toward the dependent variable (Job Satisfaction). This suggests that these factors adversely impact job satisfaction. Furthermore, the corresponding p-value is 0.000, confirming that these effects are statistically significant.

7. Limitations and Future Research Recommendations

Limitations of the Study

This study has several limitations. First, it did not fully account for external and personal variables that may influence job satisfaction, which restricts the depth of its conclusions. Second, the research focused solely on the negative effects of job stress while overlooking the potential motivational benefits of certain challenging stressors, such as time pressure

and professional responsibility. Additionally, the cross-sectional research design and limited sample scope (six public universities in western Guangdong) constrain the generalizability of the findings, making them less applicable to other regions or private institutions.

Future Research Recommendations

For future research, longitudinal designs and cross-institutional comparisons are recommended to better analyze the dynamic nature of job stress and its effects across different educational settings. Further exploration of how constructive stress enhances teacher performance is also needed. Effective coping strategies, such as resilience training and institutional support, should be examined. At the policy and practice level, recommendations include optimizing teacher welfare policies, reducing administrative burdens, providing sufficient teaching resources, and fostering a supportive work environment to enhance job satisfaction and professional development.

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