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The impact of work concerns on teaching effectiveness: evidence from Chinese private universities

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ABSTRACT

Understanding how young teachers cope with work concerns is crucial for improving teaching quality in Chinese private higher education. This study investigates the relationship between different stages of such concerns and teacher effectiveness of young lecturers in private universities. These lecturers often face workload pressure and lack of career supports, which may influence their effectiveness and professional development. This research involved 416 full-time lecturers under the age of 40 from Shandong Province. The sample was determined using Krejcie and Morgan's formula and selected through a multi-stage sampling method. Private universities were stratified into four categories, one university from each category was purposively selected, and participants were randomly sampled. Data were gathered through a structured questionnaire adapted from the stages of concern (SoC) and the school teacher effectiveness questionnaire (STEQ). Pearson correlation, multiple regression, and structural equation modeling (SEM) were conducted for analysis. The results show that task concerns and impact concerns significantly influenced teacher effectiveness across instructional planning and strategies, assessment, and learning environment. In contrast, self-concerns showed weaker influence. These findings suggest that work concerns reflect not only stress but also deeper professional motivation, pointing to the need for more purposeful supports to increase teacher effectiveness and career growth.

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1. INTRODUCTION

In the context of China's higher education reforms, private universities have emerged as critical players in expanding access to tertiary education and promoting regional educational equity [1]. Over 750 private institutions now serve more than 6 million students across the country according to the Ministry of Education in 2023. These institutions operate under distinct structural and policy environments, facing constraints such as limited public funding, weaker research capacity, and faculty recruitment challenges [2]. In recent years, researchers have paid much more attention to the professional development and teaching effectiveness of young university teachers, as their work plays a crucial role in shaping both the quality of education and the reputation of their institutions [3], [4].

Young lecturers working in private universities are often in the early stages of their careers, facing the pressures of heavy workloads and limited professional support [5]. In Shandong Provinces, where private higher education has expanded rapidly, issues such as high faculty turnover, a shortage of training opportunities, and limited access to research platforms are frequently reported [6]. These conditions may

contribute to professional stagnation, lower motivation, and ultimately, reduced teaching effectiveness. Despite governmental efforts to enhance teaching quality in non-public institutions, little empirical research has investigated how these early-career lecturers experience and manage their professional concerns in such environments.

One problem to explore is the applicability issue of the concerns-based adoption model (CBAM) developed by Fuller [7], Hall and Hord [8] in the context of China. According to this model, teachers' work concerns evolve through developmental stages: self-concerns (focused on personal adequacy), task concerns (centered on managing teaching duties), and impact concerns (oriented toward student outcomes). These concerns shape teachers' willingness to innovate, adopt instructional changes, and engage meaningfully with their professional roles. Although CBAM has been widely applied in K-12 education, especially in Western contexts, its relevance to Chinese private higher education remains underexplored [9], [10]. Another problem is teaching effectiveness which plays a crucial role in promoting student achievement and overall academic development [11]. It reflects a teacher's capacity to design meaningful learning experiences, implement effective instructional practices, monitor student learning, and maintain a positive classroom climate [12]. As a multidimensional construct, it encompasses various elements of teaching performance, including planning, instruction, classroom management, and assessment [13]. In the present study, teacher effectiveness is conceptualized through three core dimensions: instructional planning and strategies, the quality of the learning environment, and assessment practices.

Recent studies indicate that higher levels of task and impact concerns are positively correlated with adaptive instructional behaviors, reflective teaching, and greater student engagement [14], [15]. In particular, Mendez *et al*. [16] found that young educators' work concerns influence their psychological well-being and in turn, their instructional planning and classroom effectiveness. Nevertheless, few empirical studies have confirmed the predictive relationship between different stages of work concern and teaching performance metrics—especially in Chinese private universities, where teaching demands are high, but support systems remain underdeveloped.

This study aims to fill that gap by revealing the relationship between work concerns and teaching effectiveness among early-career lecturers in Chinese private universities, using validated instruments such as the stages of concern questionnaire (SoCQ) and the school teacher effectiveness questionnaire (STEQ). This investigation focuses on three dimensions of teaching effectiveness: instructional planning and strategies, assessment, and learning environment. It also considers how different stage of concerns contribute to these outcomes. By using structural equation modeling (SEM) and multiple regression, this study provides a quantitative examination of how internal psychological concerns of young teachers shape their teaching effectiveness. The contribution of this research lies in its use of the CBAM framework to the unique setting of Chinese private higher education and new empirical evidence to the global conversation on teacher development. Moreover, it offers guidance for institutional leaders who can help to in their management practice, such as mentorship, workload adjustment, and professional training, which could make young teachers more excellent. Therefore, this research addresses an important but often overlooked issue: how early-career teachers in Chinese private universities develop professionally. It brings both new ideas and practical advice to the field.

2. METHOD

2.1. Research design

This research follows a quantitative approach, utilizing a cross-sectional survey to collect data. To examine the connections between various stages of work concerns and teaching effectiveness, SEM is used. Additionally, multiple linear regression analysis is conducted to evaluate how well different stages of work concern can predict teaching effectiveness.

2.2. Population and sample

The population in this study comprised young full-time teachers employed in private universities across Shandong Province, China. According to the Statistical Bulletin on the Development of Education in Shandong Province (2023) issued by the provincial Department of Education, there are currently 44 private regular colleges and universities in the province, employing approximately 33,506 full-time faculty members. Notably, 67.3% of these teachers are under the age of 40, reflecting a hiring trend that favors recent university graduates and early-career educators. These young teachers play a critical role in the development of private universities, which makes them especially important when studying teaching effectiveness and the challenges they face in their work [17].

In this study, young teachers refer to full-time faculty members under the age of 40, usually in the early teaching careers. Their struggles and opportunities for career growth help to reveal key aspects in Chinese private universities. To make sure the sample was diverse, the study used stratified random sampling

across university types [18]. According to the sample size determination table by Krejcie and Morgan [19], this study needs at least 380 participants.

In the formal study, to ensure the representativeness of the sample, the sampling was done in two steps. In the first step, private universities in Shandong Province were divided into four groups based on categories such as institutional scale, academic focus, and regional distribution and one university was then selected from each group. In the second step, teachers from the four universities were randomly selected. In total, 416 young full-time teachers were invited to complete the questionnaire. Before collecting the data, respondents received information about the purpose of this study and were assured that their answers would be kept confidential. The study received ethical approval from four private universities in Shandong Province, with all participants providing informed consent before data collection.

2.3. Instruments

Data for this study were collected using a structured questionnaire with three sections, as shown in Table 1. The instrument was adapted from two well-established sources: the SoCQ by George *et al*. [9] and the STEQ by Akram [20]. Some modifications were made to better fit the context of young teachers in Chinese private universities, but the original structure and intent of the scales were kept. All items were rated on a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree), based on how much participants agreed with each statement.

Table 1 Distribution of items

Section	Dimensions	Items
Demographic details	Gender, age, teaching experience, qualification, and subject area	5
Work concerns	- Self-concerns - Task-concerns - Impact-concerns	25
Teacher effectiveness	- Instructional planning and strategies - Assessment - Learning environment	17

2.3.1. Section A: demographic information

There are five items in this section to collect basic background information from the participants which covers age, gender, teaching experience, qualification, and academic subject area. Respondents simply needed to tick the box that matched their situation.

2.3.2. Section B: work concerns

Items in this section was adapted from the SoCQ, which is widely used to assess individuals' attitudes and concerns in the working roles and change. In this study, it was measured by three dimensions of work concerns among young teachers: i) self-concerns, focusing on personal feeling confident and capable in their work; ii) task-concerns, relating to time management, workload, and organizational expectations; and iii) impact-concerns, reflecting the desire to influence student outcomes and contribute meaningfully to the learning environment.

2.3.3. Section C: teaching effectiveness

The final section drew from the STEQ. In this research, the variable teaching effectiveness was measured using three key dimensions: i) instructional planning and strategies, focusing on how teachers design lessons and deliver content [21]; ii) assessment, addressing how teachers evaluate student learning and use feedback [22]; and iii) learning environment, concerning the classroom atmosphere and teacher-student interactions [23].

2.4. Pilot study

The questionnaire was initially reviewed by two experts in educational research to ensure clarity, cultural appropriateness, and alignment with the research objectives. A pilot test was also conducted with a small group of 288 participants. The results indicated that both work concerns and teaching effectiveness scales show high internal reliability, with Cronbach's alpha coefficients ranging from 0.897 to 0.927, and all items showing strong item-total correlations. Exploratory factor analysis (EFA) identified three distinct factors for each scale, accounting for over 60% of the total variance, with all factor loadings exceeding 0.5. The Kaiser-Meyer-Olkin (KMO) values (0.947 and 0.914, respectively) and significant Bartlett's test results confirmed the suitability of the data for factor analysis. Confirmatory factor analysis (CFA) showed a good

overall model fit across all key indices. In addition, both the discriminant and convergent validity of the scales were confirmed, indicating that the measures were both reliable and valid for the purposes of the main study.

2.5. Data analysis

The gathered data were analyzed through a combination of descriptive and inferential statistical methods. All responses were first screened for completeness, accuracy, and consistency. After excluding incomplete or invalid entries, 416 valid questionnaires were retained for further analysis. The SPSS 26.0 and AMOS 24.0 were used for the data statistical analysis. The analytical process proceeded in several stages.

2.5.1. Descriptive statistics

To summarize the demographic profile of the participants, descriptive statistics were calculated for variables including gender, age, teaching experience, qualification, and academic subject area. In addition, means, standard deviations, skewness, and kurtosis values were calculated for all observed variables to check for normality and to understand the overall distribution of responses [24].

2.5.2. Correlation analysis

To investigate the relationship between work concerns and teaching effectiveness, Pearson's product-moment correlation coefficient was examined in this study, with the significance level set at α=0.05. It could be used to explore the relationships between different dimensions of work concerns and teaching effectiveness. Pearson correlation can identify whether there were significant relationship between the different stages of work concerns and teaching effectiveness, as well as the strength and direction of these relationships [25]. In this method, the two main statistical indicators are the Pearson coefficient (r) which can represent the extent to which two variables are linearly related and the p-value which determines the statistical significance of the observed correlation.

2.5.3. Structural equation modeling

In this study, SEM was conducted to examine how work concerns influence teaching effectiveness. SEM can explore both direct and indirect relationships among the key constructs, providing a detailed understanding of the structural connections in the model. Path coefficients, standard errors, and p-values were reported in this study to evaluate the significance of these relationships between the two variables.

2.5.4. Multiple linear regression analysis

In addition, multiple linear regression was conducted to further confirm how dimensions of work concerns could predict teaching effectiveness. In this model, the three dimensions of teaching effectiveness served as the dependent variables, while the three dimensions of work concerns were seen as independent variables. The analysis reported regression coefficients (β), R^2 values, and significance levels (p-values) to represent the extent to which each predictor contributed to the overall model. Before running the regression, multicollinearity, homoscedasticity, linearity, and independence of residuals were test to ensure the results were reliable.

3. RESULTS AND DISCUSSION

3.1. Demographic characteristics

A total of 416 young full-time teachers participated in the study. Among them, 57.7% were female and 42.3% were male. In terms of age, the majority of respondents (39.4%) were between 25 and 30 years old, followed by 30-35 years (25.7%), 35-40 years (17.5%), and 25 and below (17.3%). Regarding teaching experience, more than half of the participants (55%) had between 1 and 5 years of experience. Additionally, 18.3% had 5-10 years of teaching experience, 19.2% had over 10 years, and 7.5% had one year or less. As for academic qualifications, most respondents held a master's degree (78.4%), while 21.6% had obtained a doctoral degree. In terms of subject area, the largest group came from arts, social sciences, and humanities (29.8%), followed by computing and science (22.1%), engineering and technology (18%), academic subjects such as Chinese, English, and mathematics (19%), medicine and pharmacy (8.4%), and others (2.6%).

3.2. Common method bias test

In this study, in order to address the possible biases issue due to the reliance on self-reported measures, Harman's single-factor test was conducted. The results of the EFA revealed that six factors had eigenvalues greater than 1, and the first factor accounted for 36.230% of the total variance, which is below the recommended threshold of 40%. This indicates that common method bias (CMB) is unlikely to pose a serious threat to the validity of the results [26].

3.3. Descriptive analysis

As presented in Table 2, the average score for overall work concerns is 3.567, suggesting that participants generally experience a moderate level of concern related to their professional roles. Among the three dimensions, impact concern shows the highest mean value (M=3.651), indicating that respondents place greater emphasis on the influence their teaching has on others. In contrast, task concern records the lowest mean (M=3.477), reflecting relatively less focus on day-to-day responsibilities. The standard deviations across the subscales indicate acceptable variability in responses. Additionally, all variables exhibited skewness and kurtosis within the acceptable -2 to +2 range, suggesting approximate normality of the data. This justifies the further use of parametric statistical techniques such as t-tests, correlation analysis, multiple regression, and SEM.

Table 3 illustrates that the overall mean score of variable teaching effectiveness is 3.375, reflecting a moderate perception among the participants. Among the three dimensions, instructional planning and strategies received the highest average rating (M=3.527), suggesting that participants felt most confident in this area. In contrast, assessment recorded the lowest mean score (M=3.253), pointing to relatively lower perceived effectiveness in evaluating student learning. The standard deviations, ranging from 0.785 to 0.989, reflect a moderate degree of response dispersion across items. Moreover, the overall kurtosis value of -0.106 is very close to zero, implying that the distribution of responses approximates normality. Given the fulfillment of the normality assumption, the dataset is deemed suitable for conducting further parametric analyses, including independent samples t-tests, correlation, multiple regression, and SEM.

Table 2. Descriptive statistics result for the level of work concerns

Components	Number of items	M	SD	Skewness	Kurtosis
Self-concern	7	3.573	0.938	-0.845	-0.277
Task concern	7	3.477	0.878	-0.656	-0.422
Impact concern	11	3.651	0.855	-0.658	-0.609
Overall	25	3.567	0.766	-1.033	0.324

Table 3. Descriptive statistics result in the level of teaching effectiveness

Components	Number of items	M	SD	Skewness	Kurtosis
Instructional planning and strategies	6	3.527	0.989	-0.513	-0.792
Assessment	5	3.253	0.948	-0.272	-1.017
Learning environment	6	3.345	0.879	-0.688	-0.200
Overall	17	3.375	0.785	-0.700	-0.106

The findings provide meaningful insights into the professional development dynamics of young university teachers. Overall, both work concerns and teaching effectiveness were found to be at moderate levels. Among the dimensions of work concerns, impact concern was rated highest, while task concern received the lowest score. This aligns with previous research by Admiraal *et al*. [27] which suggests that teachers who are early in their careers may be motivated by a desire to make a broader impact, even as they struggle with task-related responsibilities. Similarly, instructional planning and strategies received the highest ratings within the teaching effectiveness scale, while assessment was the lowest, possibly reflecting confidence in teaching preparation but uncertainties in evaluating student performance [28].

3.4. Multicollinearity test

In this study, multicollinearity diagnostics were performed to assess the independence of predictor variables. All tolerance statistics in Table 4 surpassed 0.1, and the corresponding VIF values did not exceed 10, ranging from 2.049 to 3.200. These results suggest that multicollinearity is not a concern in this study, supporting the reliability and stability of the regression analyses [29].

Table 4. Results of multicollinearity test

Predictor variable	Tolerance	VIF
Self-concern	0.488	2.049
Task concern	0.313	3.200
Impact concern	0.441	2.270
Instructional planning and strategies	0.397	2.522
Assessment	0.369	2.708
Learning environment	0.334	2.991

3.5. Correlation analysis

The results of the correlation analysis in Table 5 indicate a strong, positive, and statistically significant relationship between overall work concerns and overall teaching effectiveness ($r=0.783$, $p<0.01$). At the component level, all three dimensions of work concerns (self-concern, task-concern, and impact-concern) were positively and significantly correlated with each aspect of teaching effectiveness. Among them, task concern showed the strongest correlation with the learning environment ($r=0.750$, $p<0.01$), while impact concern had the highest association with assessment ($r=0.569$, $p<0.01$).

Table 5. Correlation between work concerns and teaching effectiveness

Work concerns component	Overall teaching effectiveness	Instructional planning and strategies	Assessment	Learning environment
Overall work concerns	0.783**	–	–	–
Self-concern	–	0.477**	0.513**	0.543**
Task concern	–	0.559**	0.547**	0.750**
Impact concern	–	0.546**	0.569**	0.605**

**correlation is significant at the 0.01 level (2-tailed)

These results indicate that higher levels of work concerns, particularly task and impact concerns, are associated with more effective teaching practices across planning, assessment, and classroom environment. The results suggest that lecturers who are more attentive to task management and organizational demands are more likely to create structured and supportive classroom environments. This finding resonates with prior studies emphasizing the role of role clarity and task awareness in effective teaching [30], [31]. In addition, it aligns with studies that teachers who focus on supporting student achievement and creating meaningful learning experiences are generally more motivated, engaged, and effective in their teaching [32] and teachers who invest effort in refining lesson delivery, enhancing student participation, and planning their courses carefully tend to perform better in the classroom [33]. Therefore, higher impact concerns and task concerns may push teachers to seek professional development opportunities, adapt teaching strategies, and use innovative assessment techniques to enhance student learning outcomes. On the other hand, the correlation between self-concern and teacher effectiveness is weaker which is consistent with research that teachers who are preoccupied with job stability, promotions, or administrative expectations may not be as engaged in improving their teaching practices as those who focus on instructional and student-related concerns [34].

3.6. Structural equation modeling

The SEM in Figure 1 illustrates the direct relationships among the latent constructs of work concern and teaching effectiveness, along with their respective observed variables. The three dimensions: self concern ($\beta=0.74$), task concern ($\beta=0.82$), and impact concern ($\beta=0.79$) load strongly onto the latent variable work concern, indicating that all three are significant contributors to this construct. Work concern shows a very strong direct effect on teaching effectiveness ($\beta=0.95$), suggesting that teachers who express higher concern levels related to their work also tend to perceive themselves as more effective in their roles. Teaching effectiveness is further reflected by three components: instructional planning and strategies ($\beta=0.72$), assessment ($\beta=0.73$), and learning environment ($\beta=0.79$), all of which show strong standardized loadings, confirming that these dimensions reliably represent the overall construct. Additionally, a moderate positive correlation ($r=0.39$) exists between the latent variables of work concern and teaching effectiveness, further supporting the positive association between these two key constructs.

The SEM analysis provided a strong model fit and confirmed the hypothesized structural relationships. The three dimensions of work concern (self-concern, task-concern, and impact-concern) loaded well onto the latent construct of work concern, and work concern, in turn, had a strong direct effect on teaching effectiveness. Each of the components of teaching effectiveness (instructional planning and strategies, assessment, and learning environment) also showed strong loadings, providing empirical validation of the conceptual framework. These results are consistent with transformational and concern-based perspectives on professional growth [35]–[37]. Nwoko *et al.* [38] underscored the significance of work concerns in the private university sector, where job stability and workload concerns are prevalent.

3.7. Multiple regression analysis

The multiple linear regression model in Table 6 examined the influence of work concerns dimensions and demographic variables on teaching effectiveness across three components. The results showed that task concern and impact concern were consistently strong and significant predictors across all three domains: instructional planning and strategies, assessment, and the learning environment ($p<0.001$). Specifically, task concern demonstrated the highest standardized beta ($\beta=0.568$, $t=12.451$***) in predicting

the learning environment, highlighting its critical role. In contrast, self-concern showed a weaker and only marginally significant effect on instructional planning (β=0.105, t=2.026*) and assessment (β=0.178, t=3.471**), and a non-significant effect on the learning environment (β=0.042, t=0.982). Among demographic variables, working experience significantly influenced all three components, while gender showed a significant effect only on instructional planning. The models explained 39.4% to 59.8% of the variance in the dependent variables, with the highest explanatory power observed for the learning environment (adjusted R^2=0.598, F=78.326***).

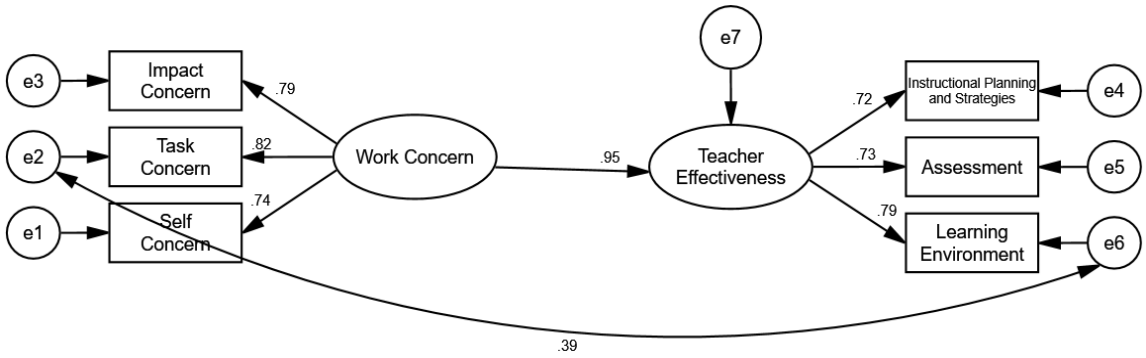

Figure 1. SEM

Table 6. Multiple linear regression analysis for work concerns on teaching effectiveness

	Instructional planning and strategies		Assessment		Learning environment	
	β	t	β	t	β	t
Gender	0.089	2.292*	0.003	0.07	0.057	1.794
Age	0.012	0.264	0.036	0.798	0.003	0.069
Working experience	0.112	2.427*	0.112	2.466*	0.088	2.355*
Qualification	0.01	0.256	-0.003	-0.071	0.049	1.537
Subject area	0.04	1.047	0.046	1.208	0.048	1.55
Self-concern	0.105	2.026*	0.178	3.471**	0.042	0.982
Task concern	0.274	4.895***	0.196	3.543***	0.568	12.451***
Impact concern	0.274	5.319***	0.317	6.233***	0.193	4.595***
R^2	0.405		0.421		0.606	
Adjusted R^2	0.394		0.409		0.598	
F	34.687***		36.938***		78.326***	

* indicates P<0.05, ** indicates P<0.01, *** indicates P<0.001

The results of multiple regression further confirmed the predictive capacity of work concerns on teaching effectiveness. All three types of concern were significant predictors, with task concern emerging as the most consistent and influential factor across all dimensions of teaching effectiveness. This underscores the practical implication that helping young teachers develop task-related competencies, such as managing time, materials, and expectations, could substantially enhance their effectiveness. These findings align with research indicating that teachers who are proactive in lesson planning and classroom management tend to exhibit higher levels of effectiveness across multiple dimensions [39]. Impact concern also significantly predicted all aspects of effectiveness, reinforcing the idea that teachers who emphasize the impact of their work are more engaged in evaluating student progress and creating meaningful learning experiences. Previous studies have also found that teachers with a strong sense of impact concern are more likely to engage in reflective teaching practices, continuous professional development, and innovative instructional strategies [40]. They actively seek ways to improve their teaching effectiveness, making them more adaptable to student needs. Contrary to some earlier assumptions, self-concern showed weaker and less consistent effects. Although it showed a significant predictive effect on instructional planning and assessment, it had no notable impact on the learning environment. This implies that personal anxieties or uncertainties may be less directly impact on how teachers manage their classrooms. This aligns with studies suggesting that while personal concerns may cause psychological stress, they do not always translate into decreased teaching performance [41]. The study confirms that work concerns are not simply emotional burdens and challenges but also key indicators and even possibly drivers of teaching effectiveness.

In addition, the regression analysis shows that work concerns have a significant impact on teacher effectiveness (R^2=0.405-0.606, p<0.001), explaining between 40% and 60% of the variation of teacher

effectiveness. However, a portion of the variance remains unexplained. This suggests that some other factors, such as individual characteristics, institutional context, or policy-related influences, may also contribute to it. As Gibbons [42] pointed out, teacher effectiveness is also shaped by factors like professional recognition, career support, and institutional management. Future research should adopt multi-level models to better capture these influences.

4. CONCLUSION

This study investigates how work concerns contribute to professional growth by examining their impacts on teaching effectiveness among young lecturers in Chinese private universities. The results of data analysis confirmed that task concerns and impact concerns play a more significant role in shaping teaching effectiveness, while self-concern had a quite limited influence. These results highlight the need to address the work-related needs of young teachers as a method to enhance their professional performance. The study offers empirical evidence linking work concerns to effectiveness, contributing to a more comprehensive view of teacher development in the context of private universities and colleges in China. Future research may explore how additional factors, such as institutional policies, leadership support, or teacher motivation, interact with work concerns to influence teacher effectiveness over time.

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AUTHOR CONTRIBUTIONS STATEMENT

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The authors state no conflict of interest.

INFORMED CONSENT

Informed consent was obtained from all participants involved in this study.

ETHICAL APPROVAL

The research involving human participants was conducted in full compliance with applicable national regulations and institutional guidelines, adhering to the principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the authors' institutional review board or an equivalent ethics committee.

DATA AVAILABILITY

The data supporting the conclusions of this study are available from the corresponding author [MKA], upon reasonable request.

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