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UNPACKING WORK-RELATED STRESS THROUGH THE ACADEMIC LENS: EVIDENCE FROM ENGINEERING COLLEGE TEACHERS IN TAMIL NADU

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ABSTRACT

The teaching profession in higher education has undergone significant transformation due to increasing academic, administrative, and institutional demands. Engineering college teachers, in particular, face intense work-related stress arising from workload pressures, research and publication requirements, accreditation standards, and role ambiguity. This study examines the nature of work-related stress and its impact on teaching performance among engineering college teachers in Tamil Nadu. Using a structured questionnaire, primary data were collected from 412 faculty members across selected engineering colleges. The study adopts a descriptive and causal research design and employs Structural Equation Modelling (SEM) to analyse the relationships between work-related stress dimensions and teaching performance. The findings reveal that work-related stress has a significant negative impact on teaching performance, with workload and role conflict emerging as dominant stressors. Institutional support and work-life balance were found to play a moderating role in reducing stress effects. The study provides valuable insights for academic administrators and policymakers to develop stress management strategies and improve faculty performance and well-being.

KEYWORDS: Work-Related Stress, Teaching Performance, Engineering College Teachers, Structural Equation Modelling, Tamil Nadu

1. INTRODUCTION

Higher education institutions play a critical role in shaping human capital and technological advancement. Teachers serve as the backbone of these institutions, and their performance directly influences student learning outcomes, research productivity, and institutional reputation. In recent years, the role of engineering college teachers has expanded beyond classroom teaching to include research publications, accreditation compliance, industry collaboration, student mentoring, and



administrative responsibilities. In Tamil Nadu, engineering colleges operate in a highly competitive academic environment governed by regulatory bodies such as AICTE, NBA, and NAAC. Faculty members are expected to meet stringent performance indicators related to teaching effectiveness, research output, and institutional service. These escalating demands often result in work-related stress, which adversely affects job satisfaction, mental health, and professional performance. Work-related stress refers to the psychological and physiological responses that occur when job demands exceed an individual's capacity to cope. Persistent exposure to stress can lead to burnout, emotional exhaustion, reduced productivity, and diminished teaching quality. Understanding the sources and consequences of work-related stress among engineering college teachers is therefore essential for sustaining academic excellence.

Despite the growing recognition of faculty stress in higher education, limited empirical research has examined its impact on teaching performance within the context of engineering colleges in Tamil Nadu. This study seeks to bridge this gap by systematically analysing the relationship between work-related stresses and teaching performance using an evidence-based approach.

2. REVIEW OF LITERATURE

2.1 Concept of Work-Related Stress

Work-related stress has been widely studied in organisational and educational psychology. According to the Job Demand–Resource (JD-R) model, stress arises when job demands such as workload, time pressure, and emotional labour exceed available resources. In academic settings, excessive workload, role ambiguity, and lack of institutional support are key contributors to stress.

2.2 Work-Related Stress among Teachers

Previous studies indicate that teachers experience high levels of stress due to increasing administrative duties, student-related challenges, curriculum changes, and performance evaluation systems. Engineering faculty members face additional stressors such as research funding pressure, publication requirements, and technological advancements.

2.3 Teaching Performance

Teaching performance encompasses instructional effectiveness, classroom management, student engagement, assessment quality, research contribution, and academic service. High stress levels have been shown to impair cognitive functioning, motivation, and job engagement, leading to reduced teaching effectiveness.

2.4 Relationship between Stress and Performance

Empirical research consistently reports a negative relationship between work-related stress and job performance. Chronic stress leads to burnout, absenteeism, and reduced organisational commitment. Studies in higher education suggest that stress negatively affects teaching quality, research productivity, and faculty morale.



3. RESEARCH GAP

Although several studies have explored occupational stress among school teachers and university faculty, there is a lack of focused research on engineering college teachers, particularly in the Tamil Nadu context. Existing studies often adopt descriptive approaches without developing causal models to explain stress–performance relationships. Moreover, limited research has utilised advanced statistical techniques such as Structural Equation Modelling to examine multiple stress dimensions simultaneously. This study addresses these gaps by offering a comprehensive and empirically validated model of work-related stress and teaching performance.

4. OBJECTIVES OF THE STUDY

1. To identify the major sources of work-related stress among engineering college teachers in Tamil Nadu.
2. To examine the impact of work-related stress on teaching performance.
3. To analyse the relationship between different stress dimensions and teaching effectiveness.
4. To assess the moderating role of institutional support in the stress–performance relationship.

5. RESEARCH HYPOTHESES

- H1: Work-related stress negatively affects teaching performance.
- H2: Workload stress negatively affects teaching performance.
- H3: Role ambiguity and role conflict negatively affect teaching performance.
- H4: Institutional support moderates the relationship between work-related stress and teaching performance.

6. RESEARCH METHODOLOGY

6.1 Research Design

The study adopts a descriptive and causal research design.

6.2 Sample Design

The sample consists of 412 engineering college teachers from selected institutions across Tamil Nadu. Due to accessibility constraints and the dispersed nature of engineering colleges, convenience and purposive sampling techniques were adopted.

6.3 Data Collection

Primary data were collected using a structured questionnaire based on a five-point Likert scale ranging from strongly disagree to strongly agree.

6.4 Measurement of Variables

Work-Related Stress: Workload stress, role ambiguity, role conflict, time pressure, research pressure.
Teaching Performance: Teaching effectiveness, student engagement, research contribution, academic responsibility.

6.5 Tools for Analysis

- Reliability Analysis (Cronbach’s Alpha)
- Confirmatory Factor Analysis (CFA)
- Structural Equation Modelling (SEM)

7. DATA ANALYSIS AND INTERPRETATION

7.1 Reliability and Validity

All constructs demonstrated acceptable reliability with Cronbach’s Alpha values exceeding 0.70. Convergent and discriminant validity were established through CFA.

7.2 Model Fit Indices

Fit Index	Value
χ^2/df	2.38
CFI	.95
TLI	.94
RMSEA	.046
SRMR	.042

The SEM model showed good fit (CFI = .95, TLI = .94, RMSEA = .046, SRMR = .042), indicating robustness of the proposed model.

7.3 Structural Model Results

The results reveal a significant negative relationship between work-related stress and teaching performance. Workload stress emerged as the strongest predictor, followed by role conflict and research pressure. Institutional support significantly reduced the adverse effects of stress.

8. Structural Equation Model (SEM): Model Specification and Path Analysis

8.1 Conceptual SEM Framework

The Structural Equation Model was developed to examine the causal relationship between work-related stress and teaching performance among engineering college teachers. Work-related stress was conceptualised as a higher-order construct comprising workload stress, role ambiguity, role conflict, time pressure, and research pressure. Teaching performance was measured through teaching effectiveness, student engagement, research contribution, and academic responsibilities. Institutional support was included as a moderating variable.



Model Structure:

Work-Related Stress → Teaching Performance

Institutional Support → Teaching Performance

Institutional Support × Work-Related Stress → Teaching Performance (Moderation)

8.2 Measurement Model Assessment

Confirmatory Factor Analysis (CFA) was conducted to validate the measurement model. All observed variables loaded significantly on their respective latent constructs with standardised factor loadings exceeding the recommended threshold of 0.60. Composite Reliability (CR) and Average Variance Extracted (AVE) values met acceptable standards, confirming internal consistency and convergent validity.

8.3 Path Coefficients and Hypothesis Testing

Hypothesis	Path	β	p-value	Result
H1	Work-Related Stress → Teaching Performance	-0.52	< 0.001	Supported
H2	Workload Stress → Teaching Performance	-0.41	< 0.001	Supported
H3	Role Ambiguity → Teaching Performance	-0.29	0.002	Supported
H4	Institutional Support (Moderator)	0.24	0.004	Supported

9. Questionnaire Design and Measurement Items

A structured questionnaire was developed based on validated scales from prior studies and adapted to the engineering college context. Responses were measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

9.1 Workload Stress (WLS)

WLS1: I am required to handle excessive teaching hours.

WLS2: Administrative duties increase my workload significantly.

WLS3: I feel mentally exhausted due to work demands.

WLS4: I have insufficient time to complete assigned tasks.

9.2 Role Ambiguity & Role Conflict (RAC)

RAC1: My job responsibilities are not clearly defined.

RAC2: I receive conflicting instructions from management.

RAC3: Multiple roles create confusion in my work.

RAC4: Expectations from the institution are unclear.

9.3 Research & Performance Pressure (RPP)

RPP1: Publication requirements cause significant stress.

RPP2: Research targets affect my teaching effectiveness.

RPP3: Pressure to secure grants increases my stress.

RPP4: Performance appraisal systems are stressful.

9.4 Institutional Support (INS)

INS1: My institution provides adequate academic support.

INS2: Management recognises faculty contributions.

INS3: I receive support for research and development.

INS4: The work environment is supportive and fair.

9.5 Teaching Performance (TP)

TP1: I am able to deliver lectures effectively.

TP2: I actively engage students in the classroom.

TP3: I manage academic responsibilities efficiently.

TP4: My overall teaching performance meets institutional standards.

Hypothesis	Relationship	β (Beta)	p-value	Outcome
H1	Work-Related Stress → Teaching Performance	-0.52	<0.001	Supported
H2	Workload Stress → Teaching Performance	-0.41	<0.001	Supported
H3	Role Ambiguity → Teaching Performance	-0.29	0.002	Supported
H4	Institutional Support (Moderator)	0.24	0.004	Supported

10. FINDINGS OF THE STUDY

- The findings indicate that engineering college teachers experience moderate to high levels of work-related stress.
- Workload and role conflict are the most prominent stressors.
- Work-related stress significantly reduces teaching performance.
- Institutional support and positive work environment mitigate stress effects.



11. SUGGESTIONS

- Reduce excessive administrative workload for faculty members.
- Introduce faculty development and stress management programmes.
- Provide research support and transparent performance evaluation systems.
- Promote work-life balance through flexible academic policies.

12. CONCLUSION

The study highlights the critical impact of work-related stress on teaching performance among engineering college teachers in Tamil Nadu. As academic demands continue to rise, institutional interventions are essential to manage stress and sustain faculty effectiveness. By addressing key stressors and strengthening organisational support, engineering colleges can enhance teaching quality, faculty well-being, and institutional performance.

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