

## The Mediating Role of Employee Perceived Stress on Work Role Stressors and Absenteeism: The Case of a Chinese Construction Company

Qiu Yu-Sean<sup>1</sup>, Saengdow Prasittisuk<sup>2,\*</sup>

<sup>1,2</sup>International School of Management, University of The Thai Chamber of Commerce

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### Abstract

The objectives of this study were to study the causes of stress, especially work role stressors, among Chinese employees and to examine the mediating role of employee perceived stress on work role stressors and absenteeism. The sample included 385 Chinese employees at a construction company. The results from descriptive and path analyses found three components of work role stressors affecting perceived stress including quantitative overload, role ambiguity, and lack of authority. Perceived stress was also found to significantly affected absenteeism and that perceived stress mediated the relationship between work role stressors (quantitative overload, role ambiguity, and lack of authority) and absenteeism.

**Keywords:** Work Role Stress, Job Stress, Perceived Stress, Absenteeism

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\* Corresponding Author; E-mail: saengdow\_pra@utcc.ac.th

## Introduction

Stress is a very common phenomenon in our life and work, which has far-reaching significance and economic consequences. Levi and Lunde-Jensen (1996) reported that 28% of the workers in the European Union reported that their work causes stress. National Institute for Occupational Safety and Health in the United States found that approximately 26 and 40% of all surveyed workers experienced stress at work. Organizational stress is costly and it is found to relate to health problems. According to Goetzel et al. (1998), health care costs for employees who experienced high levels of stress were 46% higher than employees without stress. Many studies also found the relationship between organizational stress and absenteeism. For examples, the studies in England and the U.S. found that half of employees' lost days were associated with workplace stress (Cooper, Liukkonen, and Cartwright, 1996; Elkin and Rosch, 1990). Stress also resulted in approximately 6.5 million sick days (Haswell, 2003). Absenteeism is considered as a cost for organizations (Kocakulah et al., 2016). In 2002, absenteeism had costed organizations approximately \$789 per employees (Truman, 2003). Canada Newswire (23 May, 2008) found absenteeism could be converted to \$16 billion in salary expenses (Kocakulah et al., 2016).

Currently, Chinese employees are experiencing stress problems. Studies have shown that high-level stress can affect both physical and mental health of employees, and well-being of organizations. According to the China Health Bureau, the number of suicides in China was approximately 280,000 per year (China Health Statistics Yearbook, 2020). Suicide was one of the causes of death and many cases were results of stress. Beijing Zero Research Group found that 41.1% of white-collar workers experienced stress, and 61.4% experienced different levels of mental fatigue (White Collar Work Stress Research Report, 2022).

Many studies focused on the effects of job stress on burnout, job satisfaction, job performance and organizational commitment (Jin et al., 2018; Kao, Siu and Lu, 2011; Lu, Kao, Siu, Lu, 2010). In Chinese context, less was focused on work role stressors and absenteeism. Since absenteeism is detrimental to organization, it is important to understand the sources of work role stress and its effect on organizational outcomes such as absenteeism in order to achieve the sustainable development of Chinese enterprises.

## Research Objective

To study the causes of stress, especially work role stressors, among Chinese employees and to examine the mediating role of employee perceived stress on work role stressors and absenteeism.

## Hypotheses

- H1a: Role ambiguity is positively related to perceived stress
- H1b: Future uncertainty is positively related to perceived stress
- H1c: Lack of authority is positively related to perceived stress
- H1d: Organizational conflict is positively related to perceived stress
- H1e: Technical difficulties is positively related to perceived stress
- H1f: Quantitative overload is positively related to perceived stress
- H2: Perceived stress is positively related to Absenteeism
- H3: Perceived stress mediates the relationship between Job stressors and Absenteeism

## Literature Review

### Stress

Selye (1956) described and analyzed stress as a stimulus-response orientation and that stress is “the nonspecific response of the body to any demand made upon it” (Selye, 1974). Psychological stress occurs when individuals evaluate situations as exceeding his or her resources and the situations have threatened his or her well-being (Lazarus and Folkman, 1984). Selye (1974) also provided different responses to stressors including endogenous and exogenous factors. It is important to take in to account the cognitive processes during the interaction. In order to understand why people respond differently to similar situations.

### Perceived stress

Perceived stress is the thought and feelings of a person have at a certain point of time (Phillips, 2013). It is the feeling that life is uncontrollable and unpredictable. It is affected by the frequency of dealing with annoying troubles, changes occurring in your life, and confidence in your ability to deal with problems or difficulties. Perceived stress is a measure of how a person feels stress in their life and the ability to deal with that stress, not a frequency of stressful events. Individuals can experience similar negative life events, but the impact or severity of these events will be varied due to factors such as personality, coping strategies and resources, and support. Perceived stress is considered as interactions between individuals and the environment that they perceive as affecting or overwhelming their resources and that they will have an impact on their well-being (Lazarus and Folkman, 1984). Perceived stress is often measured by questionnaires such as the Perceived Stress Scale to measure the frequency of such feelings (Cohen, 1994; Cohen, Kamarck, and Mermelstein, 1983).

### Work Role Stressors

Work stressors usually refer to the factors that stimulate individual work behavior in the work environment. Dewe (1991) proposed a method of measuring work role stressors to include six

components including (1) quantitative work overload or the situation when an individual feels as having too much work at a given time (2) Role ambiguity or the lack of clarity about one's job (3) lack of authority or the insufficiency of authority for an individual to perform his or her own job properly (4) Future uncertainty is described when an individual is uncertain about their future such as job security, and promotion (5) organizational conflict includes bending the rules, working under the guidelines that are conflicting with one another (6) Technical difficulty is when an individual experiences technical difficulties and having a hard time dealing with job changes and his or her own development.

### **Absenteeism**

Absenteeism is defined as the absence from work intentionally and habitually without a good reason (Cucchiella, Gastaldi and Ranieri, 2014). Many scholars have examined the antecedents and consequences (Cucchiella, Gastaldi and Ranieri, 2014; Belita, Mbindyo and English, 2013; Harrison and Martocchio, 1998; Allen, 1983). Harrison and Martocchio (1998) proposed an absenteeism framework based on time components to identify causes and consequences of absenteeism including long-term (more than a year), mid-term (between 3 months and one year), and short-term (a few days to three months) sources of variance. For long term variance, empirical studies found causes of absenteeism to include personality, demographics, health conditions and habits. For mid-term variance, the factors affecting absenteeism include job attitudes, social influences, external economic factors, job characteristics and work-related stress. For short-term variance, the causes include mental and physical stressors such as cold and flu and family illness, utility maximization and choice. The consequences of absenteeism can include long-term absenteeism, negative performance, withdrawal behaviors, and turnover.

### **Related Research**

Jin et al. (2018) studied the relationships between job and organizational characteristics and job and role stress among Chinese community corrections employees. They found agency formalization, supervisory support, and coworker integration to reduce role ambiguity and conflict. Job stress was increased with job dangerousness, role ambiguity, and role conflict. Employees with stronger punishment orientations were reported to have higher levels of job stress.

Wang et al. (2020) examined the relationship between job stress, job burnout, job satisfaction, and organizational commitment among university teachers in China. They found most positive effects of job stress and job burnout in three types of teachers and less negative effect of job burnout and organizational commitment among national teachers to be lower than provincial teachers. Job stress was directly predicted organizational commitment among provincial teachers.

## Research Framework

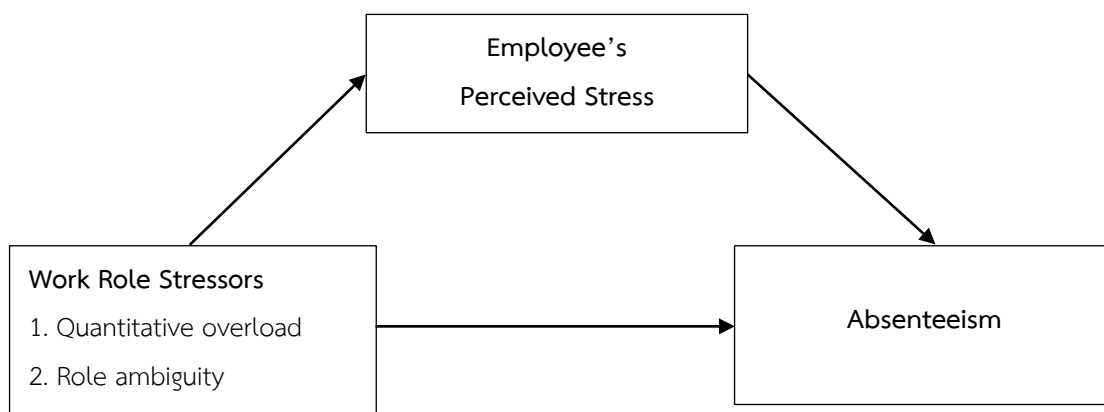


Figure 1 Research Framework

## Research Methodology

### Population and Sample

The quantitative research design was applied in studying the relationship between job stressors, employee perceived stress and absenteeism. The data was collected at Company T, a Chinese company located in Cheng du, China. The company mainly engages in the construction, maintenance and operation of base station supporting facilities. Since the author was not able to find the exact number of employees in this organization, Cochran's formula was used to calculate a sample size for unknown population. The appropriate number of samples for a given combination of precision, with 95% confidence interval, and variability is 385.

### Research Instrument

Back translation of the following scales is used in developing a Chinese version of the questionnaire.

1. Perceived-Stress Scale: The Perceived Stress Scale (Cohen, 1983) was adapted to be used in this study. It is an instrument to assess stress. It includes 10 items that measure the degree of perceived stress in a situation over the past month (Cohen, Kamar, and Marmelstein, 1983). Examples of the questions include "in the last month, how often have you been upset because of something that happened unexpectedly" and "in the last month how often you felt nervous and stressed". Each item is rated on a five-point Likert scale from 0 or never to 4 or very often.

2. Work Role Stressors Scale: The study adapted the questions from Dewe (2002) measurement of work role stressors that include 6 components including (1) quantitative work overload (2) Role ambiguity (3) lack of authority (4) Future (5) organizational conflict and (6) Technical difficulty. The participants were asked questions based on 5-point Likert scales of agreement and frequencies such

as “being unable to keep on top of the job without difficulty”, “Too much work to do in the time available” and “feeling that there is little you can do to influence things.

3. Absenteeism: For absenteeism, participants were asked how many days that they were absent from work in the past 6 months.

Table 1 shows the results from the scale reliability analysis. According to Nunnally (1978), the acceptable value for Cronbach’s alpha has to be .7 or above. The results found Cronbach’s alpha for future uncertainty, organizational conflict and technical difficulty to be lower than .7 which mean the scales are not reliable. Thus, these variables were removed from further analysis. Thus, hypotheses H1b, H1d and H1e could not be tested.

**Table 1** Cronbach’s  $\alpha$  for Work Role Stressors and Perceived Stress

Variables	$\alpha$
1. Quantitative overload	.95
2. Future uncertainty	.42
3. Role ambiguity	.79
4. Lack of authority	.77
5. Organizational conflict	.18
6. Technical difficulty	.61
7. Perceived stress	.95

### Data Collection

The questionnaire was distributed between July- August 2022 via google form to 385 employees from 4 different departments based on opportunity sample.

### Data Analysis

SPSS and Amos version 23 were used in the data analysis. Descriptive statistics including means and standard deviation will be analyzed. Pearson's correlation was used to test for associations between variables. Since the dependent variable, absenteeism, is a discrete variable, path analysis will be used to determine the mediation effect of perceived stress on work role stressors and absenteeism. Path analysis can evaluate the contribution of each path (direct and indirect paths) to the overall fit of the model.

## Findings

1. Descriptive statistics found the sample consisted of 75.7% male and 24.30% female with the majority of age between 25-35 years (51.4%). The majority of participants work in their current department for more than 5 years (54.3%). Most of the employees have master's degrees (51.4%)

and are married (50.5%). The participants work in Technology department (27.3%), operation department (26.2%), finance department (24.6%), and management department (21.9%), respectively. Table 2 shows means and standard deviations of work role stressors and perceived stress. Participants experienced more quantitative overload than other components with the mean score of 3.03 while they feel less of the role ambiguity with the mean score of 2.59.

**Table 2** Means and Standard Deviations of Work Role Stressors and Perceived Stress

Variables	Mean	S.D.
1. Quantitative overload	3.03	.32
2. Role ambiguity	2.59	.52
3. Lack of authority	2.72	.47
4. Perceived stress	3.04	.43

2. Descriptive variables including age, gender, tenure, department, and marital status were included in correlation analysis. From table 3, the correlations between variables range between .82 and .95 which are considered as strongly correlated.

Figure 2 and table 4 show the results from the path analysis. For direct effect, quantitative overload is significantly affected absenteeism ( $\beta=.56$ ), while lack of authority and role ambiguity did not have any effect on the variable. For indirect effects, the first paths of qualitative overload, role ambiguity, and lack of authority are significantly affected perceived stress with  $\beta = .66, .15$ , and  $.35$  respectively, supporting hypotheses 1a, 1c and 1f. The relationship between perceived stress and absenteeism (second path) is highly significant with  $\beta = .69$ , supporting hypothesis 2. According to Baron and Kenny (1986), direct effects of work role stressors and absenteeism have to be significant in order to establish a mediation. However, Hayes (2013) argued that the mediation can be significant if the paths between (1) work role stressors and perceived stress (path a) and (2) perceived stress and absenteeism (path b) are significant. Therefore, hypothesis 3 on the mediation effect of perceived stress on work role stressors and absenteeism is supported for quantitative overload, role ambiguity, and lack of authority.

**Table 3** Pearson's Correlations between Variables

Variables	Pearson's Correlation (r)				
	Quantitative overload	Role ambiguity	Lack of authority	Perceived stress	Absenteeism
<b>Work role stressors</b>					
1. Quantitative overload	1				
2. Role ambiguity	.88**	1			
3. Lack of authority	.90**	.82**	1		
Perceived stress	.95**	.87**	.90**	1	
Absenteeism	.76**	.69*	.69**	.76**	1

\*\*sig<.05, \*\*\*sig<.001

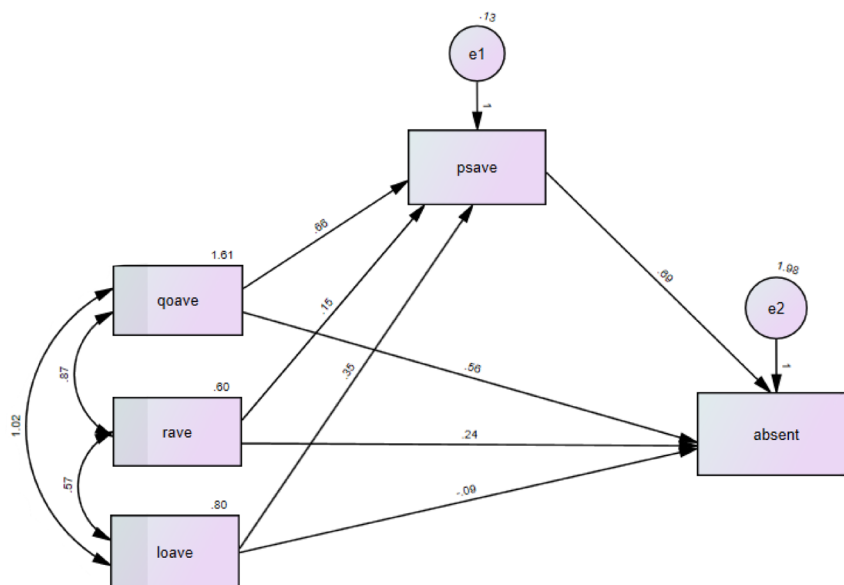


Figure 2 Results from Path Analysis

**Table 4** Regression Weights from the Path Analysis

	Path	$\beta$	S.E.
Perceived stress	<--- Quantitative overload	.66***	.04
Perceived stress	<--- Role ambiguity	.15**	.05
Perceived stress	<--- Lack of authority	.35***	.05
Absenteeism	<--- Lack of authority	-.089	.20
Absenteeism	<--- Role ambiguity	.242	.21
Absenteeism	<--- Quantitative overload	.56**	.21
Absenteeism	<--- Perceived stress	.69***	.20

\*\*sig<.05, \*\*\*sig<.001



## Discussion

The study found that Chinese participants experienced more quantitative overload than role ambiguity and lack of authority. These work role stressors have significant effects on perceived stress. In other words, when employees feel that they experience too much work at a given time, lack of clarity about their jobs and lack of authority to perform their own jobs properly, they perceived themselves as having stress. Consistent with other research on absenteeism, this study found perceived stress to positively related to absenteeism (Harrison and Martocchio, 1998; Frankenhaeuser and Gardell, 1976; Hill and Trist, 1955). For mediation analysis, if the study adopted Barron and Kenny (1986), the mediation effect would not hold. However, Heyes (2013) argued that the direct effect between independent variables and dependent variables are not necessary; thus, the mediation is significant.

During the analysis on work role stressors, it was found that the scales for three out of six components were not reliable. These work role stressor scales included organizational conflict, technical difficulties, and future uncertainty. Pickett, Valdez, and Barry (2020) found in their study on scale reliability among different demographic group and found that a scale that is reliable in one group may not be reliable in another group. Therefore, the scale developed by Dewe (1991) in New Zealand may not be reliable in China. Thus, the scales should be validated further in Chinese participants.

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