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RESEARCH ARTICLE

## Role Conflict Related Job Stress among Construction Professionals: The Moderating Role of Age and Organization Tenure

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### Abstract

Demographic variables play a vital role in determining stress occurring from workplace demands. Role conflict is a major workplace demand, specifically in the context of construction. However, the way demographic variables influence the stress occurring from role conflict is less explored in the literature. Specifically, the literature does not fully explain the positioning of age and organization tenure on the relationship between role conflict and job stress. Hence, the present study evaluates the moderating role of age and organization tenure on the relationship between role conflict and job stress. A survey was conducted by distributing the questionnaire directly to randomly selected project-level employees of ten large private contractors in Sri Lanka. A total of 274 valid respondents were collected and used to run a factor analysis validated hierarchical regression analysis to assess the research hypotheses. The results showed that role conflict has a positive direct effect on job stress. The findings further revealed that the impact of role conflict on job stress is high for young employees in the construction industry, as young employees do not possess the necessary life skills or experience to cope with role conflict. Contrary to the authors' expectations, there is no significant contribution from organization tenure to the relationship of role conflict and job stress. Since the young employees are more vulnerable to role conflict, special considerations should be given to improve the well-being of the young workforce. Hence, it is recommended that contractors should assign seasoned supervisors who can nurture the young employees and act as mentors. The

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supervisors should give clear instructions and inform what the young subordinates need to do when confronted with non-overlapping requests or orders from the other parties involved in the project. Besides, organizations must conduct periodic conflict management and resolution training programs to help the employees cope with the conflicts that occur in the workplace, which is the path to lessen the impact of role conflict as organization tenure accumulates.

## Keywords

**Role Conflict; Job Stress; Age; Organization Tenure; Construction Industry**

## Introduction

Job stress has progressed as a critical issue in the modern corporate environment as it has consequences for both organization and the employees themselves. Stress could create changes in metabolism, increase heart and breathing rates and blood pressure, bring on headaches, induce heart attacks, backaches, eye strain, sleep disturbances, dizziness, fatigue, loss of appetite, and gastrointestinal problems ([Nixon et al., 2011](#); [Gianaros and Wager, 2015](#); [Robbins and Judge, 2019](#)). Besides, the employees who often struggle to cope with stress might develop mental health illnesses such as depression, autism, and schizophrenia ([Manderscheid et al., 2010](#)).

Adverse health conditions such as job stress and burnout are not only related to psychological and physiological illnesses but also related to several organizational factors such as decreased job satisfaction, low organization commitment, diminished performance, high absenteeism, elevated turnover, and greater accident rate ([Leung, Chan and Olomolaiye, 2008](#); [Halkos and Bousinakis, 2010](#); [Leung, Chan and Yuen, 2010](#); [Calisir, Gumussoy and Iskin, 2011](#); [Leung, Yee and Dongyu, 2011](#); [Robbins and Judge, 2019](#); [Yukongdi and Shrestha, 2020](#); [Dodanwala and Santoso, 2021](#); [Dodanwala and Shrestha, 2021](#)). Thus, insight into the antecedents of job stress would help mitigate stress and adverse outcomes resulting from stress.

Over the past couple of decades, a considerable amount of research has been conducted to develop predictive models of job stress, with role conflict among the most frequently proposed antecedents ([Calisir, Gumussoy and Iskin, 2011](#); [Chen, Lin and Lien, 2011](#); [Rizwan et al., 2014](#); [Vanishree, 2014](#); [Parvaiz et al., 2015](#); [Frank, Lambert and Qureshi, 2017](#)). Construction projects are complex, with many trades and many parties involved. On many occasions, employees have to work with two or more groups that operate quite differently and/or receive incompatible requests from two or more people. Thus, workplace conflict is a common phenomenon in the construction industry ([Barough, Shoubi and Skardi, 2012](#)). It appears that previous studies of construction conflicts focus heavily on how the conflicts would affect the contractor as a company, but less has been done on the empirical validation of workplace conflict and job stress linkage ([Leung et al., 2005](#); [Leung, Chan and Yuen, 2010](#)). Therefore, there is a limitation in the existing literature on the relationship between role conflict and job stress in the context of construction project employees.

Workplace conflict is inevitable, impossible to eliminate, and probably not wise to try, as it could be the path toward a much-needed change in the organization ([Haraway and Haraway, 2005](#); [Olafsen et al., 2021](#)). With this in mind, it is crucial to identify the factors that diminish the adverse impact of role conflict on job stress. Age and the organization tenure of the employees could be factors of such caliber, as with an increase in age and organization tenure, people gain new experience and skills, which act as a natural tool against workplace demands and help them cope with stress ([Frese and Zapf, 1994](#); [Bradley, 2007](#); [Cohen-Callow, Hopkins and Kim, 2009](#); [Boyas, Wind and Kang, 2012](#)). However, the role of age and organization tenure in role conflict (a type of work demand) and the job stress relationship is not empirically tested and validated in the literature.

In addressing the above knowledge gaps, the present study first evaluates the effect of role conflict on the job stress of the project-level construction professionals. Since job stress is a major issue in Sri Lanka's construction industry ([De Silva, Samanmali and De Silva, 2017](#); [Senaratne and Rasagopalasingam, 2017](#); [Panojan, Perera and Dilakshan, 2019](#); [Dodanwala and Santoso, 2021](#)), the present study authors focus on collecting data from the project level employees of Sri Lanka's construction industry. Second, the moderating role of age and organization tenure on the relationship between role conflict and job stress is assessed. The rest of the paper's structure is as follows: the article reviews relevant literature and develops the conceptual framework and hypotheses. Then, the methodology is described, followed by results and discussion. Finally, the conclusions are discussed.

## Literature Review

### JOB STRESS

The three most common definitions of stress are stimulus-based stress, response-based stress, and stressor-strain-based stress ([Beehr and Franz, 1987](#)). The stimulus-based stress looks into stress as a situational or environment-based stimulus, imposing upon a person ([Beehr and Franz, 1987](#)). In contrast, response-based stress is defined as a person's psychological or physiological reaction to environmental factors ([Beehr and Franz, 1987](#)). The third definition of job stress uses a combination of both first and the second definitions, and the third definition is assumed to be superior as it explains more about stress ([Arnold et al., 2005](#)). Therefore, the third definition of job stress has been used in this study. Hence, job stress is defined as a person's psychological or physiological response to environmental forces that cause bodily and mental strain ([Beehr and Franz, 1987](#)). When an employee perceives the working environmental stimulus as a threat and believes it is beyond their capacity to deal with it, the job stress occurs in the form of physical or mental strain ([Fleming, Baum and Singer, 1984](#)).

Stress primarily occurs in chronic and acute states. A continuous source of stress could lead to a chronic nature in stress, and the employees' who experience chronic stress do not fully recover between workdays, causing a lasting psychological and physiological strain ([Parker and DeCotiis, 1983](#); [Jamal and Baba, 2000](#); [Naoum et al., 2018](#)). In contrast, acute stress occurs in the short term due to temporary situations ([Parker and DeCotiis, 1983](#); [Jamal and Baba, 2000](#)). Thus, understanding the chronic nature of stress in construction projects are extremely important as the construction industry is already one of the world's most stressful sectors ([Poon et al., 2013](#); [Enshassi, El-Rayyes and Alkilani, 2015](#)), and adding more into stress is only going to make matters worse as elevated stress is detrimental to the employees' health ([Robbins and Judge, 2019](#)).

Some of these detrimental effects are empirically validated in the construction literature itself. [Dodanwala and Santoso \(2021\)](#) evaluated the link between job satisfaction facets, job stress, and turnover intentions of construction project professionals in Sri Lanka and concluded that job stress is the most significant variable predicting construction employees' turnover intentions. Besides, studies of [Leung, Chan and Olomolaiye \(2008\)](#), [Leung, Yee and Dongyu \(2011\)](#), and [Leung, Liang and Chan \(2017\)](#) assessed how workplace stress influences the performance of construction project managers and other construction professionals. They concluded that extreme levels of stress are adversely related to the task, interpersonal, organizational, and overall performance. In addition, stress at construction projects is related to elevated injury incidents as psychological and physiological feelings greatly influence project personnel's safety behavior and performance ([Leung, Chan and Yuen, 2010](#); [Wu et al., 2018](#)). Hence, job stress has risen as an imperative variable in the project environment that should be controlled for the well-being of the project staff and the project itself.

## ROLE CONFLICT

According to the job demands-resources model, role conflict is a job demand that can drain energy and yield physiological and psychological costs by requiring sustained physical and/or mental effort at work ([Bakker and Demerouti, 2007](#); [Olafsen et al., 2021](#)). Role conflict occurs when an employee faces inconsistency or incompatibility in the demands and expectations of various parties that cannot be satisfied at the same time ([Kahn et al., 1964](#)). This means that the employees who have to work with two or more groups that operate quite differently and/or receive incompatible requests from two or more people would have increased role conflict levels.

Projects involving construction bring together a variety of specialized organizations and people. These people engage with one another during the project to achieve the project's objectives and goals ([Kabiri, Hughes and Schweber, 2014](#)). One of the most important aspects of every encounter between people is the expectation that one person has for the other, which can be clearly seen in any construction project. For any given participant in the project, a number of other participants will have multiple expectations regarding the tasks of that participant ([Kabiri, Hughes and Schweber, 2014](#)). Thus, the project-level employees of construction organizations are confronted with fulfilling their role expectations and the other stakeholders' expectations. When these expectations do not align together, conflict can occur between the parties involved in it ([Chen, Lin and Lien, 2011](#); [Frank, Lambert and Qureshi, 2017](#)).

## AGE

Age is a conspicuous variable in stress-related studies as prior research has demonstrated that age links to employees' job attitudes and well-being. The literature mainly suggests that older employees tend to report better well-being and more favorable workplace views than younger ones ([Ng and Feldman, 2009](#); [Boyas, Wind and Kang, 2012](#); [Dodanwala and Santoso, 2021](#)). This is because younger employees are at a higher risk for adverse outcomes such as job stress as they do not possess the necessary life skills or experience to cope with it. In contrast, older employees develop better-coping practices to deal with stress over time ([Barnes-Farrell, Rumery and Swody, 2002](#); [Cohen-Callow, Hopkins and Kim, 2009](#)).

## ORGANIZATION TENURE

Organization tenure refers to the number of years an individual has spent in their present organization ([Dodanwala and Santoso, 2021](#)). The literature on organization tenure suggests that the employees are more likely to learn throughout their tenure about new stress coping mechanisms and which coping mechanisms are most appropriate for them in various job scenarios, resulting in better well-being ([Frese and Zapf, 1994](#); [Barnes-Farrell, Rumery and Swody, 2002](#); [Bradley, 2007](#)). Besides, the employees who cannot adapt to the environmental forces that cause job stress would eventually quit the job, and stress-resilient employees will remain ([Firth et al., 2004](#); [Chen, Lin and Lien, 2011](#); [Fong et al., 2018](#); [Tetteh et al., 2020](#); [Yukongdi and Shrestha, 2020](#); [Dodanwala and Santoso, 2021](#)).

## CONTROLLING ROLE OF GENDER AND EDUCATION LEVEL

Several studies have assessed the role of gender in stress measures. It was revealed that employees with more masculine characteristics are less stressed at the workplace than employees with feminine traits ([Wu and Shih, 2010](#)). Typically, male employees tend to display more masculine characteristics than their female counterparts ([Dodanwala and Santoso, 2021](#)). These masculine characteristics would help male employees to cope with stress occurring at the workplace, resulting in a lower degree of job stress ([Conway, 2000](#); [Dial, Downey and Goodlin, 2010](#); [Wu and Shih, 2010](#); [Dodanwala and Santoso, 2021](#)). Since the gender of the respondents plays a role in their perceived stress levels in the construction sector ([Dodanwala and Santoso,](#)

2021), which is the focus of this study and is considered heavily dominated by men (Fielden et al., 2000; Adeyemi et al., 2006; Ness, 2012), the authors of the present study have decided to control the effects of gender on job stress.

As suggested by Azad and Qolami (2011) in their study of the relationship between geographical areas, personality, socioeconomic status, and demographical factors, the education level of employees is negatively associated with workplace stress. The more educated employees are more aware of their role complexity and are equipped with advanced knowledge to address the scope of the work (Shenkar and Zeira, 1992), resulting in lessened role ambiguity and more clarity at work. Construction projects are complex, with many parties from different backgrounds involved in the execution; consequently, role clarity plays a major role in their day-to-day work (Leung, Chan and Yuen, 2010). Since role clarity is a major antecedent of job stress (Leung, Chan and Yuen, 2010; Calisir, Gumussoy and Iskin, 2011; Chen, Lin and Lien, 2011; Vanishree, 2014) and education level influences role clarity, the authors have decided to use education level as a control variable.

## CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

The conceptual framework of this study is shown in Figure 1. Role conflict is modeled as the independent variable in this conceptual framework, and job stress is modeled as the dependent variable. Age and the organization tenure are set as the moderating variables on the relationship between role conflict and job stress. The hypotheses development of the study is explained and discussed in the below paragraphs.

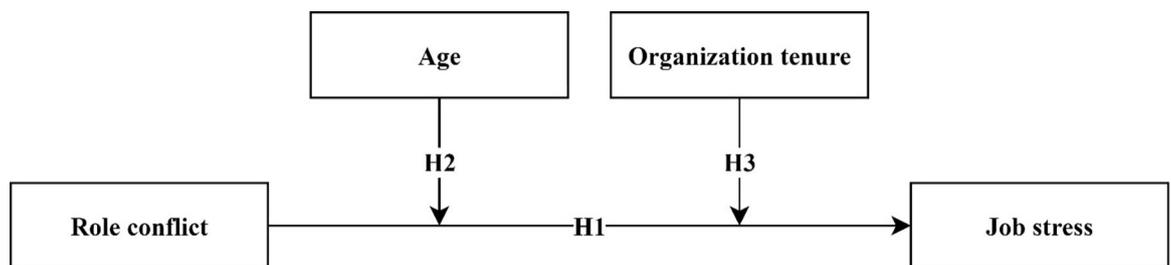


Figure 1. Conceptual framework of the study

Construction projects involve bringing different people together to achieve the objectives (Leung, Chan and Yuen, 2010). The project employees have to interact with these people daily and are tasked with fulfilling their role expectations as well as those stakeholders during the day-to-day operations (Leung, Chan and Yuen, 2010). When these expectations are not in sync, conflict can occur (Leung, Chan and Yuen, 2010; Chen, Lin and Lien, 2011; Kabiri, Hughes and Schweber, 2014). Consequently, the stress levels occurring to the employees will increase. Hence, a high level of role conflict increases work-related stress (Leung et al., 2005; Leung, Chan and Yuen, 2010; Calisir, Gumussoy and Iskin, 2011; Chen, Lin and Lien, 2011; Rizwan et al., 2014; Vanishree, 2014; Parvaiz et al., 2015; Frank, Lambert and Qureshi, 2017; Summers et al., 2020; Olafsen et al., 2021). However, this relationship is not rigorously explored in the construction literature. Thus, the following hypothesis is developed and tested in the context of construction for this research.

**H1: Role conflict has a positive direct effect on job stress.**

Since older employees develop better life skills or experience to cope with possible workplace demands (Barnes-Farrell, Rumery and Swody, 2002; Cohen-Callow, Hopkins and Kim, 2009), the authors believe that the old employees would have better-coping mechanisms against workplace conflict. Thus, the effect

of role conflict on job stress would be low for older employees than that of the young employees at the construction project level. However, the role of age on role conflict and job stress linkage is yet to be empirically evaluated. Hence, the following hypothesis is tested in the study.

**H2: Age moderates the effect of role conflict on job stress such that the effect of role conflict on job stress is lower for older employees.**

With the accumulation of the organization tenure, the employees develop new coping mechanisms, learn appropriate use of different coping mechanisms, and either quit or remain on the job based on individual stress resilience levels (Frese and Zapf, 1994; Barnes-Farrell, Rumery and Swody, 2002; Bradley, 2007; Yukongdi and Shrestha, 2020; Dodanwala and Santoso, 2021). Hence, the employees who have developed greater coping mechanisms may overcome workplace demands and would have a long tenure. In view of the above arguments, it is assumed that with an increment in organization tenure, the employees have learned how to cope with role conflict, which results in a lower degree of job stress. Thus, the authors developed the following hypothesis.

**H3: Organization tenure moderates the effect of role conflict on job stress such that the effect of role conflict job stress is lower for employees with longer tenure.**

## Research Methods

### SAMPLE AND DATA COLLECTION

A self-administered survey has been distributed to randomly selected 520 project-level employees of ten large private contractors in Sri Lanka during the fourth quarter of the year 2019. The ten construction organizations were selected for the data collection purposes based on the following criteria. First, the company must be a large contractor. Second, the company should operate building construction projects. Third, the building construction projects must be in Colombo, Sri Lanka. The hard copies of the questionnaires were then distributed to the randomly selected staff level project employees at the building construction projects, which accounted for 520 employees. Along with the questionnaire, a cover letter is also enclosed. The cover letter assures the confidentiality of the respondents and explains the purpose of this survey. Altogether, 329 questionnaires were received back with a response rate of 63.27%, and 274 fully completed questionnaires have been selected for analysis purposes. The sample chosen for the study exceeds the minimum sample (S) requirement of 271, derived from Cochran's sample measure formula for an unknown population, at a 90% confidence interval (Z) and 5% margin error (e) (Cochran, 2007). In the calculation, the authors assumed population proportion (P) to be 0.5, providing the maximum sample size. Since the sample size is greater than the minimum requirement, it is assumed that the sample chosen would sufficiently represent the population of the study. Cochran's formula for an unknown population is illustrated in Equation 1.

$$S = \frac{Z^2 P(1 - P)}{e^2} \quad (1)$$

### MEASURES

*Role conflict.* An eight-item scale developed by Rizzo, House and Lirtzman (1970) was used to measure role conflict occurring to the employees. The scale has been widely used by many researchers and has proven to show good psychometric properties. A sample item of role conflict includes "I receive incompatible requests from two or more people." A five-point Likert scale of 1 = "strongly disagree" to 5 = "strongly agree" has been used to rate the items on this scale.

*Job stress.* An eight-item scale developed by [Tate, Whatley and Clugston \(1997\)](#) was used to measure job stress. This scale assesses both psychological and physiological features of stress. Many researchers have widely used this scale, such as [Firth et al. \(2004\)](#) and [Siong et al. \(2006\)](#) and exhibited good psychometric properties. A sample item of psychological features includes “I feel frustrated at my job,” and a sample item of physiological features includes “Job-related problems make my heart beat faster than usual.” A five-point Likert scale where 1 = “strongly disagree” to 5 = “strongly agree” has been used to rate the items on this scale.

Since role conflict and job stress are measured using existing instruments, it was required to assess the validation and the suitability of these instruments in the context of the construction industry in Sri Lanka. Hence, a pilot testing was conducted with 30 randomized samples and checked for the factor loadings and internal consistency of the two variables. All the items under two constructs had factor loadings above 0.30, which is greater than the minimum factor loading recommended by [Hair et al. \(2019\)](#). Besides, both the constructs showed adequate internal reliability over 0.70 ([Nunnally and Bernstein, 1994](#)). Hence, no items were dropped, and no changes were made to the instruments.

*Moderating variables.* Age and organization tenure is used as the moderating variables in the present study. Both age and organization tenure were measured in years as continuous variables, and exact values are used in the analysis. Using exact values as continuous variables is commonly used in role conflict and job stress literature (e.g., [Hang-yue, Foley and Loi, 2005](#); [Dodanwala and Santoso, 2021](#)), as it exerts more profound and accurate results.

*Control variables.* Gender and education level can influence job stress occurring to the employees at the workplace. Hence, the gender and education level of respondents are controlled in the analysis. Gender was coded 1 if the respondent is male and coded 2 if the respondent is female. Education level was coded 1 if the respondent has a high school degree, coded 2 if the respondent has a diploma, coded 3 if the respondent has a bachelor’s degree, and coded 4 if the respondent has a master’s degree.

## SURVEY DATA ANALYZING STRATEGY

The analysis was initiated by assessing the demographic information of the respondents. Then Confirmatory Factor Analysis (CFA) for role conflict and job stress was conducted using the Analysis of Moment Structures (AMOS) to assess the model fit of the specified model and the construct validity of the study variables ([Hair et al., 2019](#)). The CFA is utilized because the present study employs existing instruments to measure role conflict and job stress, and the authors focus on validating the use of it in the context of Sri Lanka’s construction industry. The two moderating variables and the control variables are excluded from CFA, as they are not latent constructs. After the validation, the composite variable of job stress and role conflict was established for the latter stage of the analysis. Subsequently, the authors developed descriptive statistics to get an overview of the study variables. Finally, the authors conducted hierarchical regression analysis as recommended by [Aiken, West and Reno \(1991\)](#) to assess the moderating role of age and organization tenure on the relationship between role conflict and job stress, with the use of the Statistical Package for the Social Sciences (SPSS).

## Results

### DEMOGRAPHIC INFORMATION

[Table 1](#) represents the demographic information of the respondents. Of the total sample, 78.8% were male, and 21.2% were female, implying that the sample is in line with previous studies indicating that the construction industry is still male-dominant ([Fielden et al., 2000](#); [Adeyemi et al., 2006](#); [Ness, 2012](#)). About 42% of the respondents hold a diploma, 49.6% hold a bachelor’s degree, and only 8.4% hold a master’s

Table 1. Demographic information

Respondent's profile	Number	Percentage
<i>Gender</i>		
Male	216	78.8
Female	58	21.2
<i>Educational level</i>		
Highschool	1	0.4
Diploma	114	41.6
Bachelor's degree	136	49.6
Master's degree	23	8.4
<i>Managerial level</i>		
Low-level management	94	34.3
Middle-level management	180	65.7
<i>Marital status</i>		
Single	127	46.4
Married	146	53.3
Divorced	1	0.4

degree. More than one-third (34.3%) of the respondents were in the low-level management, whereas the rest (65.7%) accounts for the middle-level management at the construction project level. The marital status information suggests that 46.4% were single, 53.3% were married, and 0.4% were divorced.

### CONFIRMATORY FACTOR ANALYSIS

The purpose of CFA was to assess the model fit of the specified model and the construct validity of the study variables. The analysis is conducted with the use of a measurement model. The fit statistics determine how well this theoretical model fits the data of the study, whereas the construct validity explains the extent to which a set of measured items accurately reflects the latent theoretical constructs in the model. For role conflict and job stress of the present study, items themselves have been used as the indicators of the constructs. The two moderating variables and the control variables are excluded from CFA, as they are not latent constructs and do not have any measurement errors.

First, it was checked how well the specified model fit the data with the use of model fit indices. As recommended by [Hair et al. \(2019\)](#), researchers should provide one absolute fit index and one incremental fit index in addition to providing Chi-square ( $X^2$ ) and its associated Degrees of Freedom (df) statistics in determining the model fit. Therefore, the authors include the Root Mean Square Error of Approximation (RMSEA) test, an absolute fit index measure, and the Comparative Fit Index (CFI) test, an incremental fit index measure to assess the fitness of the measurement model. The models'  $X^2 = 391.764$ ,  $df = 103$ ,

Table 2. Standardized factor loadings, AVE, internal reliability, and the fit statistics of the modified CFA model

Code	Items	Standardized factor loadings	AVE	Composite reliability	Cronbach's alpha
	<i>Role conflict</i>		0.446	0.865	0.864
RC1	I have to do things that should be done differently	0.601			
RC2	I receive an assignment without the manpower to complete it	0.684			
RC3	I have to 'buck' a rule or policy in order to carry out an assignment	0.575			
RC4	I work with two or more groups who operate quite differently	0.662			
RC5	I receive incompatible requests from two or more people	0.737			
RC6	I do things that are apt to be accepted by one person and not accepted by others	0.728			
RC7	I receive an assignment without adequate resources and materials to execute it	0.732			
RC8	I work on unnecessary things	0.603			
	<i>Job stress</i>		0.383	0.827	0.835
JST1	I feel emotionally drained by my job	0.669			
JST2	I feel burned-out by my job	0.695			
JST3	I feel frustrated at my job	0.740			
JST4	I feel tense at my job	0.733			
JST5	I lose my appetite because of my job-related problems	0.590			
JST6	Job-related problems keep me awake at night	0.363			
JST7	Job-related problems make my stomach upset	0.488			
JST8	Job-related problems make my heart beat faster than usual	0.575			
	<i>Model fit indices</i>				
	$\chi^2 = 255.098$ , $df = 101$ , $p = 0.000$ , $\chi^2/df = 2.526$ , $RMSEA = 0.075$ , and $CFI = 0.909$				

$p = 0.000$ ,  $X^2/df = 3.804$ , RMSEA = 0.101, and CFI = 0.829, suggesting that the model do not provide a sufficient fit to the data. Therefore, the authors inserted covariance for error terms based on modification indices to improve the model's fit statistics. The authors have covaried the first and the second error terms of the job stress construct and the sixth and seventh error terms of the job stress construct. [Table 2](#) illustrates the CFA results of the modified measurement model. The fit statistics of the modified measurement model include  $X^2 = 255.098$ ,  $df = 101$ ,  $p = 0.000$ ,  $X^2/df = 2.526$ , RMSEA = 0.075, and CFI = 0.909, implying that the modified model provides a sufficient fit to the data.

Then, the construct validity, i.e., convergent validity, discriminant validity, and internal reliability, were assessed. The Average Variance Extracted (AVE) of role conflict (AVE = 0.446) and job stress (AVE = 0.383) was lower than the recommended criteria of 0.5. However, [Fornell and Larcker \(1981\)](#) suggest that even though the AVE < 0.5, the convergent validity can be achieved if the composite reliability is above 0.6. Since the two variables' composite reliability is greater than 0.6, the authors conclude that adequate convergent validity exists for both role conflict and job stress constructs. The square root values of the AVE for both role conflict (square root of AVE = 0.668) and job stress (square root of AVE = 0.619) are greater than their correlation value ( $r = 0.28$ ,  $p < 0.01$ ), and hence the latent constructs explain more of the variance in its item measures than that it shares with another construct. Thus, the two variables satisfy the discriminant validity criteria. Finally, the internal reliability testing suggests adequate internal reliability for both role conflict and job stress constructs, as both are above the minimum acceptable criteria of 0.6 for composite reliability and 0.7 for Cronbach's alpha ([Fornell and Larcker, 1981](#); [Nunnally and Bernstein, 1994](#)).

## DESCRIPTIVE ANALYSIS

The authors conducted a correlation analysis between the independent, dependent, moderating, and control variables. The purpose of this analysis was to identify the interrelationship between the study variables. [Table 3](#) presents the correlation results and the mean values of each variable. The maximum achievable mean value for role conflict and job stress is 5.00 as this study uses a five-point Likert scale to measure them. As expected, role conflict is significantly correlated with job stress ( $r = 0.28$ ,  $p < 0.01$ ). Besides, job stress is significantly correlated with gender ( $r = 0.13$ ,  $p < 0.05$ ), one of the study's control variables.

## HIERARCHICAL REGRESSION ANALYSIS

Lastly, the authors tested the specific research model using hierarchical regression analysis. The analysis tested the theoretical model in which age and organization tenure act as moderating variables on the

Table 3. Descriptive statistics of the study variables

Variables	M	SD	1	2	3	4	5	6
1. Gender	1.21	0.41	1					
2. Education level	2.66	0.63	0.00	1				
3. Age	31.24	5.93	-0.23**	0.30**	1			
4. Organization tenure	3.17	2.24	-0.11	0.11	0.56**	1		
5. Role conflict	3.47	0.65	-0.05	0.14*	0.02	0.10	1	
6. Job stress	3.01	0.64	0.13*	0.01	-0.09	0.00	0.28**	1

Note: \*\*  $p < 0.01$  and \*  $p < 0.05$ ; M = mean and SD = standard deviation; 1 = male and 2 = female has been coded for gender; 1 = high school, 2 = diploma, 3 = bachelor's degree, and 4 = master's degree has been coded for education level; Age and organization tenure were measured in years.

relationship between role conflict and job stress. To test moderation, the authors followed [Aiken, West and Reno \(1991\)](#) procedure by entering the main effect of role conflict as well as the interaction effects on job stress. If the interaction paths are significant, moderator hypotheses are supported. [Table 4](#) illustrates the two-way interaction results of age and organization tenure. All main variables were mean-centered to reduce multicollinearity and enhance interpretability ([Cohen et al., 2013](#)). The authors further followed the [Aiken, West and Reno \(1991\)](#) procedure to plot simple slopes at high (M+1SD) and low (M-1SD) levels of age and organization tenure, which is illustrated in [Figure 2](#).

Table 4. Hierarchical regression results on job stress

Variables	Job stress		
	Step 1	Step 2	Step 3
<i>Control variables</i>			
Gender	0.13*	0.13*	0.15*
Education level	0.01	-0.01	-0.01
<i>Main variables</i>			
Role conflict		0.29**	0.27**
Age		-0.08	-0.11
Organization tenure		0.03	0.06
<i>Interaction variables</i>			
Role conflict × age			-0.19*
Role conflict × organization tenure			0.04
<i>R<sup>2</sup> (adjusted)</i>	0.01	0.09	0.11
<i>F statistics</i>	2.30	6.19**	5.60**
<i>R<sup>2</sup> change</i>		0.09	0.02
<i>F change</i>		8.66**	3.79*

Note: \*\*  $p < 0.01$  and \*  $p < 0.05$ ; Standardized coefficients are reported; 1 = male and 2 = female has been coded for gender; 1 = high school, 2 = diploma, 3 = bachelor's degree, and 4 = master's degree has been coded for education level; Age and organization tenure were measured in years.

The hierarchical regression results suggest that role conflict positively affects job stress ( $\beta = 0.27, p < 0.01$ ). Given the above finding, H1 is supported by this study. The two-way interaction hypotheses 2 and 3 were tested by observing step 3 of the hierarchical regression analysis. As shown in [Table 4](#), the interaction between role conflict and age was negative and significant to job stress ( $\beta = -0.19, p < 0.05$ ). Hence, H2 is supported. Contrary to the authors' expectations, they could not find a significant interaction from organization tenure ( $\beta = 0.04, p > 0.1$ ), and hence H3 is not supported in this study.

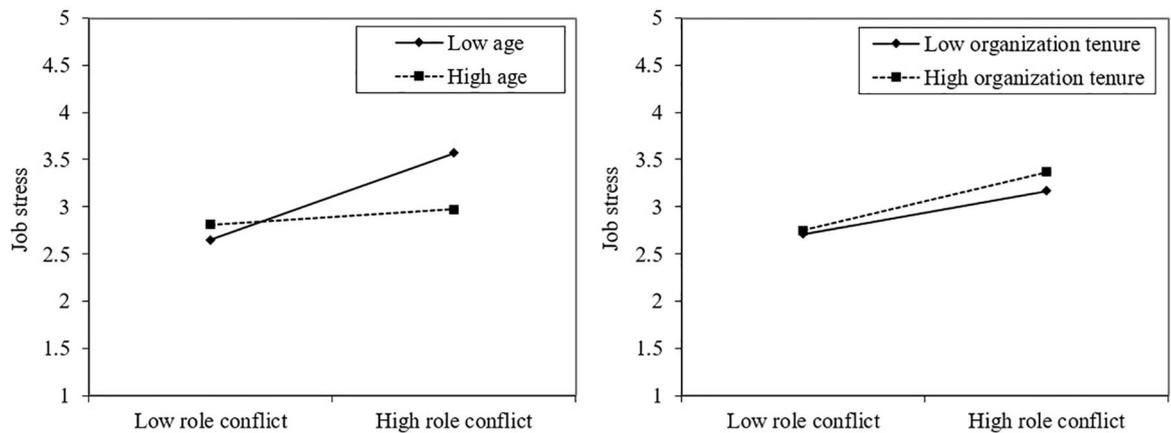


Figure 2. The moderating role of age and organization tenure

## Discussion

The present study added the moderating role of age and organization tenure to the existing empirical research on role conflict and job stress linkage. The purpose was to examine the relationship between role conflict and job stress by focusing on the project-level construction employees' age and organization tenure. In line with the hypotheses, the results supported the theoretical model, which enhanced the understanding of workplace conflict and stress measures. The theoretical and practical implications are discussed in the following subsections.

### THEORETICAL IMPLICATIONS

Consistent with the previous studies ([Leung et al., 2005](#); [Leung, Chan and Yuen, 2010](#); [Calisir, Gumussoy and Iskin, 2011](#); [Chen, Lin and Lien, 2011](#); [Rizwan et al., 2014](#); [Vanishree, 2014](#); [Parvaiz et al., 2015](#); [Frank, Lambert and Qureshi, 2017](#); [Summers et al., 2020](#); [Olafsen et al., 2021](#)), the authors found a positive link between role conflict and job stress. Construction projects are complex, with many trades and many parties involved. Consequently, in many cases, employees have to work with two or more groups that operate quite differently and/or receive incompatible requests from two or more people. The project-level employees of construction organizations are confronted with fulfilling their role expectations and the other stakeholders' expectations. When these expectations do not align together, conflict can occur between the parties involved in it. This conflict can cause confusion, and when mistakes happen, typically, the blame will be on the side of the employees. As a consequence, the stress levels occurring to the employees will increase.

The importance of age in stress-related studies has also been illustrated from the findings. In particular, the influence of role conflict on job stress is stronger for young employees than that of old employees at the construction project level. This may be due to the fact that younger employees are at a higher risk for adverse outcomes such as job stress as they do not possess the necessary skills or experience to cope with role conflict. In contrast, with an increment in age, people repeatedly gain life experience or learn new skills ([Cohen-Callow, Hopkins and Kim, 2009](#); [Sakires, Doherty and Misener, 2009](#)). This knowledge carries over to other situations such as work, which would help them cope with workplace conflicts. Hence, employees develop better-coping practices to deal with stress occurring from role conflict as age accumulates.

It was also highlighted that organization tenure does not play a moderating role in the relationship between role conflict and job stress. This could be related to the respondents of the study, in which the study covers all staff-level construction project professionals of contractors in Sri Lanka. The non-significant interaction of organization tenure could mean that merely gaining experience at construction projects is ineffective in learning how to cope with workplace conflicts.

## PRACTICAL IMPLICATIONS

The findings of this study have implications for practice. Since young employees are more vulnerable to role conflict, special considerations should be given to improve the well-being of the young workforce. Upon joining a construction project, young employees should be informed of the project hierarchy, and seasoned supervisors should be allocated, which can act as direct supervisors and mentors to the young employees. The supervisor should give clear instructions and inform the young subordinates when confronted with non-overlapping requests or orders from the other parties involved in the project. The supervisors' instruction should be based on the contract conditions and specifications of the project. Providing an open and accessible communication platform in the project is also necessary for this to work. Additionally, such working culture will provide social support to the young employees who are mainly in the early stage of their careers. More importantly, with such a nurturing work environment, the supervisors manage to personally guide the young employees and pass down the knowledge on how to cope with conflicts arising at the workplace.

The construction industry in Sri Lanka hardly conducts any human resource development training programs and is mainly focuses on the projects' outcomes. This becomes an issue, as shown by the findings; merely gaining work experience along with an increment in the tenure would not help employees cope with stress occurring from workplace conflict. Hence, the working culture in Sri Lanka, which heavily focuses on experience rather than the quality of experience, could be detrimental to the construction organizations, as workplace conflict and stress is linked with increased turnover, decreased productivity, and high accidental rates ([Hang-yue, Foley and Loi, 2005](#); [Leung, Chan and Yuen, 2010](#); [Calisir, Gumussoy and Iskin, 2011](#); [Leung, Liang and Chan, 2017](#); [Dodanwala and Santoso, 2021](#)). Therefore, it is crucial for organizations to conduct periodic conflict management and resolution training programs to help the employees cope with the conflicts that occur in the workplace, which could lead to a lower degree of job stress as organization tenure accumulates ([Haraway and Haraway, 2005](#)).

## LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The practical implications of the study, however, are tempered to some extent by its limitations. First, the relationship between role conflict and job stress included common method variance as the data were obtained from a self-administered questionnaire. Second, the data of this study came from a relatively restrictive population of project-level construction professionals. Hence, future research should explore this research direction in different industries and regions to make comparisons.

## Conclusions

This study presents an attempt to assess the moderating role of age and organization tenure for the previous empirical research on the relationship between role conflict and job stress in the construction industry context. Thus, this study fills a research gap and enhances the understanding of role conflict and work stress for construction professionals, who are highly vulnerable to the stress inherent in their occupation. Moreover, it contributes to the literature by including age and organization tenure as potential moderators on the relationship between role conflict and job stress, an underexplored area in the literature. The present study confirmed the moderating role of age empirically. Contrary to the authors' expectations, they could not find evidence to support the moderating role of organizational tenure. Since young employees are more vulnerable to role conflict, it is recommended to focus on improving the well-being of the young workforce by assigning seasoned supervisors who can nurture the young employees and act as mentors. Additionally, organizations need to conduct periodic conflict management and resolution training programs to aid the employees in coping with the conflicts that occur in the workplace. Finally, the authors hope that this study

will motivate the researchers to conduct research in non-Western settings using samples often neglected in the literature.

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