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The Interactive Effects of Challenge Stressors, Leader-Member Exchange, and Positive Stress Mindset on Job Engagement and Job Performance

**ABSTRACT**

We integrated a job demands-resources model and substitutes for leadership theory to examine the moderated effect of leader-member exchange on the indirect relationship between challenge stressors and job performance mediated by job engagement. Furthermore, we used stress mindset to examine the three-way moderated effect in the aforementioned relationship. Data were collected from 487 employees from the different occupations in Taiwan. Statistical analysis results supported the moderated mediation effect and the three-way interaction effect. The findings suggest that when supervisors' social support resources are weak, positive stress mindset can instead be a key resource for an employee's positive work motivation.

**KEYWORDS:** Challenge stressors, Leader-member exchange, Positive stress mindset, Three-way interaction, and Job engagement

**INTRODUCTION**

Job stress is a key concern for both academic researchers and practitioners. Generally, job stress refers to the job characteristics that may threaten an individual's physical or mental state in the workplace. Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964) introduced the concept of stressors into the organization and management research areas, and organizational scholars have increasingly discussed workplace stressors and have developed stress management techniques. Most early studies on stress have argued that stress is harmful and negatively affects organizations and individuals; thus, people must adopt effective strategies to prevent or reduce stress incidence (Atkinson, 2004; Bodenmann, Meuwly, Bradbury, Gmelch, & Ledermann, 2010; McEwen & Seeman, 1999; Schwabe & Wolf, 2010). In fact, the nature of job stress may be different, and perception of experienced stress during the process of pursuit working goals may differ among people. Stress should not necessarily be perceived as negative or leading to negative outcomes. Nevertheless, prior studies have mostly focused on the negative effects of stress, and the positive effects of stress have been overlooked.

Cavanaugh, Boswell, Roehling, and Boudreau (2000) followed Selye's (1982) inverted U-shape model and transactional theory of stress (Lazarus & Folkman, 1984) and classified job stressors as challenge stressors and hindrance stressors. Challenge stressors have potential growth opportunities for individuals, can guide individuals to invest effort into solving problems, and result in positive consequences. Hindrance stressors, by contrast, cause people to be under constant pressure from job demands, reducing their work motivation and leading to negative results (Podsakoff, LePine, & LePine, 2007). Most scholars have consistently agreed that hindrance stressors (e.g., organizational policies, job insecurity, and role ambiguity) lead to negative results, such as higher turnover intention, withdrawal behaviors (Cavanaugh et al., 2000; Podsakoff et al., 2007), and physical symptoms (Webster, Beehr, & Christiansen, 2010); but lower job satisfaction (Cavanaugh et al., 2000; Podsakoff et al., 2007; Webster et al., 2010), engagement (Crawford, LePine, & Rich, 2010), motivation (LePine, Podsakoff, & LePine, 2005) and job performance (LePine et al., 2005; Pearsall, Ellis, & Stein, 2009; Wallace, Edwards, Arnold, Frazier, & Finch, 2009). Conversely, challenge stressors lead to positive outcomes,

such as higher job satisfaction (Cavanaugh et al., 2000; Podsakoff et al., 2007; Webster et al., 2010), engagement (Crawford et al., 2010) and performance (LePine et al., 2005), and lower turnover (Cavanaugh et al., 2000; Podsakoff et al., 2007).

Whether the nature of job stress makes people thrive or languish from job demands, the individual's perception of stressor is the key factor affecting the follow-up behavior. In the job demands-resources (JDR) model (Bakker & Demerouti, 2007), a stressor was interpreted as a job demand that consumes an individual's physical and mental resources and induces feelings of stress and job resources can alleviate the relationship between job demands and feelings of stress. When an employee faces problems in the organizational environment, employees often consult their direct supervisors. Some prior studies on conservation of resources (COR) theory have identified the supplemental resources of supervisors to alleviate employee work stress and lessen negative consequences (Campbell, Perry, Maertz Jr, Allen, & Griffeth, 2013; Thomas & Lankau, 2009). Theoretically, based on JDR model and COR theory, job resources should reduce negative outcomes. However, our study focus on challenge stressors and the mechanism that lead to more positive work results. When employees encounter challenge stressors, we proposed that besides leader may plays supportive role, individuals can appraise whether job resources (e.g., leader-member exchange, LMX) provide an effective and positive multiplication effect when they face job demands. Specifically, we apply substitute for leadership theory (Kerr & Jermier, 1978) argued that when individuals recognize that they can handle the stress they face, the leader's social support role lessens. Besides, some studies argued that social support sometimes has no effect or harmful effect, partially in the context of occupational stress (Beehr, Bowling, & Bennett, 2010; Beehr, Farmer, Glazer, Gudanowski, & Nair, 2003).

Moreover, some scholars have suggested that the consequences of challenge stressors need further exploration. Widmer, Semmer, Kälin, Jacobshagen, and Meier (2012) focused on the contradictory mentality of challenge stressors, their study pointed out that challenge stressors can trigger an employee's organization-based self-esteem and induce positive results. González-Morales and Neves (2015) argued that not all challenge stressors positively affect job performance. They suggested that only when challenge stressors have been treated as an opportunity appraisal and through a mechanism of emotional commitment, it can have a positive influence on job performance. Accordingly, we believe that when leadership behavior cannot play a supportive role for individuals facing a stressful situation, individuals' mindsets of stress play another moderating role and guide individual follow-up decision-making behaviors. Therefore, we introduce the concept of stress mindset, which refers to the extent to which one believes that stress enhances or debilitates (Crum, Salovey, & Achor, 2013) to be the moderator in the relationship between the interaction effect of LMX and challenge stressors in job engagement. Specifically, individuals first assess job demands and job resources, the effect on job performance depends on the degree of one's positive stress mindset.

Overall, we propose that the nature of the stressor, the cognitive assessment, and employee attitude toward stress all affect subsequent employee work behaviors. We expect this paper to contribute as follows: first, we integrate the job demands-resource model and substitutes for leadership theory and explain the role of job resources in the relationship between job demands and job performance. Second, we extend the Crum et al. (2013) stress mindset concept to examine its role versus LMX in work behaviors. Finally, we highlight the possible three-way moderating role of stress mindset in the job demands-resources model.

## **THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT**

### **Job Demands-Resources Model**

The job demands-resources (JDR) model was proposed by Bakker and Demerouti (2007). The basic assumption of JDR is that job stress exists in any occupation, and the risk factors associated with job stress can be broadly divided into two categories: job demands and job resources. Both involve the physical, psychological, social, and organizational aspects of the job. Job demands require the individual to continue to invest effort or skill toward work and necessarily incur physical and psychological costs to the individual, such as high-intensity work stress, uncomfortable working conditions, and emotional loads caused by customer interactions. Job resources not only help to achieve goals and reduce the work requirements and physical and mental consumption related to work but also stimulate individual growth, learning, and development, such as higher salaries, better career development, job safety, and interpersonal social support. Bakker and Demerouti (2007) explained this phenomenon using two mechanisms: first, job demands deplete an employee's physical and psychological resources, bring strain, jeopardize the employee's health, and result in poor job performance; this is called the "health impairment process." Second, job resources help in achieving work goals; therefore, the employee's internal motivation is activated, resulting in a good job performance. Finally, Bakker and Demerouti (2007) further proposed the interaction hypothesis between job demands and job resources. Specifically, job resources can alleviate the relationship between job demands and strain, whereas job demands can strengthen the relationship between job resources and motivation.

### **Challenge-Hindrance Stressors**

Cavanaugh et al. (2000) followed Selye (1982) and Lazarus and Folkman's (1984) work, suggesting that job stressors have both negative and positive effects on work outcomes. They classified work stressors into "challenge" and "hindrance" stressors. Challenge stressors were defined as "work-related demands or circumstances that, although potentially stressful, have associated potential gains for individuals", such as workload, time pressure, job responsibility, and job complexity. Hindrance stressors were defined as "work-related demands or circumstances that tend to constrain or interfere with an individual's work achievement and that do not tend to be associated with potential gains for the individual," for instance, role ambiguity, role conflict, hassle, red tape, organizational politics, and job insecurity (Cavanaugh et al., 2000, p. 68).

Prior studies have shown that challenge stressors are positively related to job attitude, such as job satisfaction (Cavanaugh et al., 2000; Podsakoff et al., 2007; Webster et al., 2010), loyalty (Boswell, Olson-Buchanan, & LePine, 2004), organizational commitment (Podsakoff et al., 2007), engagement (Crawford et al., 2010); cognition, such as motivation (LePine et al., 2005), self-efficacy (Webster et al., 2010), organizational justice (Zhang, LePine, Buckman, & Wei, 2014); and behaviors, such as performance (LePine et al., 2005), role-based performance (task performance, citizenship performance, and customer service performance; Wallace et al., 2009), and team performance (Pearsall et al., 2009). Challenge stressors also have negative effects on job attitudes, such as intention to quit (Boswell et al., 2004), turnover intention (Podsakoff et al., 2007); and behaviors, such as job search (Boswell et al., 2004; Cavanaugh et al., 2000), turnover (Cavanaugh et al., 2000; Podsakoff et al., 2007), and work withdrawal behavior (Boswell et al., 2004). By contrast, hindrance stressors are positively related to job attitudes, such as intention to quit (Boswell et al., 2004), turnover intention (Podsakoff et al., 2007),

psychological withdrawal (Pearsall et al., 2009); and behaviors, such as job search (Boswell et al., 2004; Cavanaugh et al., 2000), turnover (Cavanaugh et al., 2000; Podsakoff et al., 2007), withdrawal behaviors (Podsakoff et al., 2007), and physical symptoms (Webster et al., 2010). Hindrance stressors also have negative effects on job attitudes, such as job satisfaction (Cavanaugh et al., 2000; Podsakoff et al., 2007; Webster et al., 2010), loyalty (Boswell et al., 2004), organizational commitment (Podsakoff et al., 2007), engagement (Crawford et al., 2010); cognition, such as motivation (LePine et al., 2005), self-efficacy (Webster et al., 2010), organizational justice (Zhang et al., 2014); and behaviors, such as performance (LePine et al., 2005), role-based performance (task performance, citizenship performance, customer service performance; Wallace et al., 2009), and team performance (Pearsall et al., 2009).

Although these two types of stressors affect the opposite consequences, prior research found that both challenge and hindrance stressors are positively related to psychological strain (anxiety and emotional exhaustion; Boswell et al., 2004), exhaustion (LePine, LePine, & Jackson, 2004), strain (LePine et al., 2005; Podsakoff et al., 2007), anxiety (Rodell & Judge, 2009), frustration (Webster et al., 2010), and burnout (Crawford et al., 2010).

### **Job Engagement**

Kahn defined engagement as “the simultaneous employment and expression of a person’s ‘preferred self’ in task behaviors that promote connections to work and to others, personal presence (physical, cognitive, and emotional) and active, full role performances” (Kahn, 1990, p. 700). Organizational members use their physical, cognitive, emotional resources and wholeheartedly donate their energy to their work. Engaged individuals are described as being psychologically present, “fully there,” attentive, feeling, connected, integrated, and focused in their role performance. In other words, job engagement is a multidimensional concept of motivation that reflects an individual’s ability and resources to be fully engaged at work. According to the JDR model, this study regarded challenge stressors as a job demand—they can entail growth and development opportunities, can trigger positive emotions for employees, is a challenging and stressful job demands for employees. To achieve working goals, employees were motivated and were willing to invest more effort to obtain the desired results (Crawford et al., 2010). Thus, we infer that challenge stressors enhance job engagement and improve job performance.

Hypothesis 1: Job engagement mediates the positive relationship between challenge stressors and job performance.

### **Leader-Member Exchange (LMX) and Substitute for Leadership**

LMX theory focuses on the dyadic relationship between leaders and followers (Graen, 1976). The core notion of LMX is that leaders treat their subordinates differently depending on the quality of the social exchange between them (Graen & Uhl-Bien, 1995; Liden, Sparrowe, & Wayne, 1997). LMX is the employees’ perceptions of the quality of the interpersonal social exchange between them and their immediate supervisor (Liden & Maslyn, 1998). Low-quality LMX relationships are regarded as those that entail a unidirectional top-down influence, economic exchange behaviors, and formal role-defined associations. Leaders and subordinates rely almost exclusively on formal employment contracts, maintaining a distance between themselves (Graen & Uhl-Bien, 1995). High-quality LMX relationships are characterized by mutual trust, respect, and obligation. Leaders rely more heavily on followers, interact with

employees more frequently, and encourage them to undertake more responsibilities in such relationships. Followers assume additional duties and perform beyond their contractual expectations (Dunegan, Duchon, & Uhl-Bien, 1992). In high-quality LMX relationships, leaders provide subordinates with social support, which is characterized as being empathetic and supportive of subordinates' needs (Medler-Liraz, 2014).

Kerr and Jermier (1978) proposed substitutes for leadership theory, arguing that the process of leadership influence, in addition to the formal level of leadership, should include the organization, tasks, groups, and personal factors to more thoroughly understand the leadership process. Substitutes for leadership suggests that subordinate characteristics and task and organizational characteristics affect leadership behavior. Subordinate characteristics include professional competence, experience, and knowledge; task characteristics include task routine and task feedback; organizational characteristics include organizational standardization or professional adviser groups (Howell, Bowen, Dorfman, Kerr, & Podsakoff, 1990; Kerr & Jermier, 1978). That is, the relationship between leadership and follower behavior reduces if followers are aware that they possess all skills and knowledge needed to successfully accomplish a task (Kerr & Jermier, 1978; Manz & Sims, 1980; Podsakoff, MacKenzie, Ahearne, & Bommer, 1995).

When employees perceive job demands as challenge stressors, employees are convinced that the job demands provide opportunities for growth and learning, which means employees are confident and have sufficient capacity or knowledge to accept challenging tasks. However, the stronger the relationship between the leader and employee (i.e., a high LMX situation), the more the employee relies on the resources or solutions provided by their leader. Therefore, employees do not need to work harder or find methods to overcome the problem, which would reduce their job engagement and job performance. Conversely, weak leader-member relationships mean that employees must solve problem alone. Substitutes for leadership suggests that employee task knowledge acts as a substitute for a supervisor's leadership behavior. When employees have all the knowledge and skills needed to successfully complete the task and realize that the feedback from tasks provides them with growth opportunities, leadership behaviors are replaced (i.e., a low LMX situation), because employee's work ability is superior to what the leader can provide them. Accordingly, we propose Hypothesis 2:

Hypothesis 2: LMX moderates the positive indirect effect of challenge stressors and job performance mediated by job engagement. When LMX is high, the positive indirect effect weakens; when LMX is low, the positive indirect effect is stronger.

### **Stress Mindset**

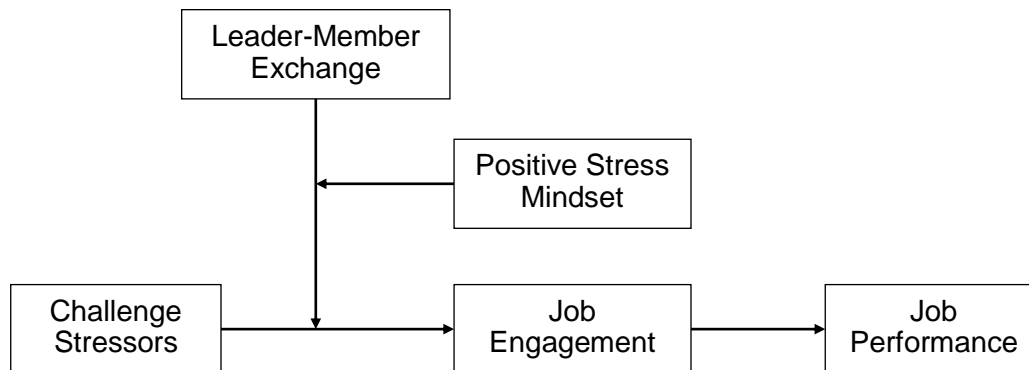
As mentioned earlier, the closer the relationship between leaders and members is, the fewer the employees are who are engaged in the work. We further believe that an employee's mindset of stress has more impact on job engagement. One's behaviors are driven by cognition, which is influenced by perception, so we think that an individual's mindset of a challenge stressor is the original internal driving force. "Mindset" is defined as a mental frame or lens through which we selectively organize and encode information and guide an individual's corresponding actions and responses through a unique method of understanding (Dweck, 2008). Crum et al. (2013) bring the concept of mindset into the field of stress. Stress mindset is the extent to which an individual believes that stress enhances or debilitates. They suggested that changing one's stress mindset improves a person's response to stress. Specifically, if an individual's mindset is stress-is-enhancing, their primary motivation is to accept and utilize stress to achieve their goals,

which engenders positive consequences. By contrast, if an individual's mindset is stress-is-debilitating, that individual's primary motivation is to avoid or manage the stress to prevent negative or debilitating outcomes. The stress mindset measure was developed by Crum et al. (2013) who treated the stress-is-enhancing and stress-is-debilitating mindsets as a continuum; thus, a higher score on the scale means an individual's mindset is stress-is-enhancing, whereas a lower score means an individual's mindset is stress-is-debilitating. However, we believe that stress mindset should be two independent factors; therefore, we separated the stress mindset measure (Crum et al., 2013) into positive and negative stress mindsets. Individuals with a positive stress mindset engender beneficial results, but negative stress mindsets engender damaging results.

For that reason, we expect that a three-way moderated effect exists. When employees face challenge stressors, even if the leadership behavior being substitute, as long as employees can retain a positive stress mindset, employees can still engage in work by utilizing their own knowledge and skills. Otherwise, if employees have a negative stress mindset, even if many job resources are available, employees still cannot be motivated to engage in their work. Our logic is similar with González-Morales and Neves (2015), they argued that challenge stressors must be evaluated as an opportunity appraisal so that a positive effect on job performance through emotional commitment can result. Accordingly, we propose Hypothesis 3.

Hypothesis 3: There is a three-way interaction of challenge stressors, LMX, and positive stress mindset (PSM) in predicting job engagement, such that the highest levels of job engagement occur when challenge stressors and PSM are high and LMX is low and the lowest levels of job engagement occur when challenge stressors and LMX are high and PSM is low.

Figure 1: Research framework



## METHOD

### Sample and Procedure

Research participants were employees and their supervisors. Randomized sampling was used on 530 employees from different occupations, including trading company employees, restaurants employees, travel agents, bank employees, salespeople, and the staff of gas stations and train stations in Taiwan. After uncompleted questionnaires were excluded, a final

sample of 487 questionnaires was used for data analyses. Employee demographics showed that 57.6% of participants were females, with an average age of 26.10 years and average work tenure of 4.94 years. Most were single (85.2%) and educated to college level (76.3%).

## Measure

*Challenge stressors.* We measured challenge stressors using the 6-item scale of Cavanaugh et al. (2000). A sample item was “The amount of time I spend at work.” The Cronbach’s alpha coefficient was 0.81.

*Job engagement.* The 18-item scale of Rich, Lepine, and Crawford (2010) was used. A sample item was “I work with intensity on my job.” The Cronbach’s alpha coefficient was 0.94.

*LMX.* We assessed LMX using the 7-item scale of Graen and Uhl-Bien (1995). A sample item was “I understand that my supervisor is satisfied with my performance.” The Cronbach’s alpha coefficient was 0.89.

*Positive stress mindset.* We measured stress mindset using the stress mindset measure—general (SMM-G) 8-item scale of Crum et al. (2013), but we treated the original four of eight positive items as a positive stress mindset and the other four inverted items as a negative stress mindset. A sample item was “Experiencing stress facilitates my learning and growth.” The Cronbach’s alpha coefficient was 0.69.

*Job performance.* The 5-item job performance scale developed by Viswesvaran, Ones, and Schmidt (1996) was used. A sample item was “My working quality is high.” The Cronbach’s alpha coefficient was 0.70. All variables in this study followed responses ranging from 1 (strongly disagree) to 5 (strongly agree).

*Control variable.* We included the demography control variables age and education. Additionally, challenge stressors and hindrance stressors are two relevant variables; thus, we included hindrance stressors as control variables to exclude its effect. We measured hindrance stressors using the 6-item scale of Cavanaugh et al. (2000). A sample item was “The lack of job security I have.” The Cronbach’s alpha coefficient was 0.73.

## Confirmatory Factor Analysis

We examined the validity of our measures by performing confirmatory factor analysis (CFA). Because the limited sample size relative to the many parameters estimated in the model can be difficult to confirm (Floyd & Widaman, 1995), we created parcels of items (including two or three items for each variable except stress mindset) for the analyses. Each parcel was constrained to load onto the latent construct without any error covariance. Table 1 presents a description of the models and their results. Supporting the independence of the six focal constructs, the results indicated that the six-factor model (chi-square = 351.56, df = 120; CFI = 0.910; NNFI = 0.886; RMSEA = 0.063; SRMR = 0.060) fits the data better than the other models. By contrast, because stress mindset was originally loaded onto one factor (Crum et al., 2013), we conducted two-factor CFA to examine whether the eight items were loaded onto two factors. The results indicated that the data fit the two-factor model (chi-square = 169.910, df = 19; CFI = 0.819; NNFI = 0.733; RMSEA = 0.128; SRMR = 0.067) better than one-factor model (chi-square = 528.029, df = 20; CFI = 0.390; NNFI = 0.147; RMSEA = 0.228; SRMR = 0.144).

Table 1: Confirmatory Factor Analysis of Nested Models

Model	$\chi^2$	df	$\Delta\chi^2$	$\Delta$ df	CFI	NNFI	RMSEA	SRMR
One-factor model	1071.71***	135	—	—	.637	.589	.119	.105
Three-factor model	678.59***	132	393.12	3	.788	.754	.092	.093
Four-factor model	515.01***	129	163.58	3	.850	.823	.078	.076
Five-factor model	485.82***	125	29.19	4	.860	.829	.077	.075
Six-factor model	351.56***	120	134.26	5	.910	.886	.063	.060

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Note: One-factor model (CS+HS+JE+JP+LMX+PSM); Three-factor model (CS+HS, JE+JP, LMX+PSM); Four-factor model (CS, HS, JE+JP, LMX+PSM); Five-factor model (CS, HS, JE, JP, LMX+PSM); Six-factor model (CS, HS, JE, JP, LMX, PSM). CS = Challenge Stressor; HS = Hindrance Stressor; JE = Job Engagement; JP = Job Performance; LMX = Leader-Member Exchange; PSM = Positive Stress Mindset.

## RESULTS

Mean, standard deviation, bivariate correlation, and scale reliability for all the studied variables are shown in Table 2. The correlations for all of the substantive variables were positive and significant.

Table 3 shows the results of the hierarchical mediation regression analysis for job performance that were used to test Hypothesis 1. Model 2-3 in Table 3 shows that job engagement significantly mediated the relationship between challenge stressors and job performance ( $\beta = 0.47$ ,  $SE = 0.04$ ,  $p < 0.001$ ); therefore, Hypothesis 1 was supported.

Table 2: Means, Standard Deviations, and Correlations Among All Studied Variables

Variables	Means	SD	1	2	3	4	5	6	7	8
1.Age	26.10	10.71	—							
2.Education	2.84	.53	.01	—						
3.HS	2.72	.69	.05	.02	(.81)					
4.CS	3.60	.63	.21***	.14**	.22***	(.73)				
5.JE	3.66	.56	.23***	.17***	.03	.54***	(.94)			
6.JP	3.57	.54	.15**	.11*	.11*	.56**	.64***	(.70)		
7.LMX	3.36	.63	-.00	.04	-.07	.29***	.52***	.38***	(.89)	
8.PSM	3.62	.56	-.09	.05	.01	.26***	.42***	.39***	.39***	(.69)

Note:  $N = 487$ . Reliabilities are reported in parentheses along the diagonal. HS = Hindrance Stressor; CS = Challenge Stressor; JE = Job Engagement; JP = Job Performance; LMX = Leader-Member Exchange; PSM = Positive Stress Mindset.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Regarding Hypothesis 2, we expected that LMX would have a moderating effect on the first stage of Hypothesis 1. We conducted hierarchical moderation regression analysis using Mplus 7.0—the result is shown in Table 4. First, Table 4 shows the interaction term of challenge stressors and LMX has a significant negative moderated effect on job engagement ( $\beta = -0.16$ ,  $SE = 0.04$ ,  $p < 0.001$ ). We plotted this interaction at conditional values of LMX (1 SD above and below the mean) in Figure 2. This graph indicates that the indirect relationship between challenge stressors and job performance mediated by job engagement is stronger when LMX is lower.



Table 3: Results of Mediated Hierarchical Regression Analyses

	Job Engagement		Job Performance		
	Model 1-1	Model 1-2	Model 2-1	Model 2-2	Model 2-3
<b>Control Variable</b>					
Age	.01 (.00)***	.01 (.00)**	.01 (.00)**	.00 (.00)	-.00 (.00)
Education	.18 (.05)***	.11 (.04)**	.11 (.05)*	.04 (.04)	-.01 (.03)
Hindrance Stressor	.01 (.04)	-.08 (.03)*	.08 (.04)*	-.01 (.03)	.03 (.03)
<b>Independent Variable</b>					
Challenge Stressor		.47 (.04)***		.47 (.03)***	.25 (.04)***
<b>Mediator</b>					
Job Engagement					.47 (.04)***
R <sup>2</sup>	.08	.32	.05	.32	.48
F	14.51***	57.38***	7.65***	55.31***	88.25***
ΔR <sup>2</sup>		.24		.27	.16
ΔF		170.70***		189.36***	151.09***

Note. The regression coefficient is unstandardized coefficient and standard error is reported in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

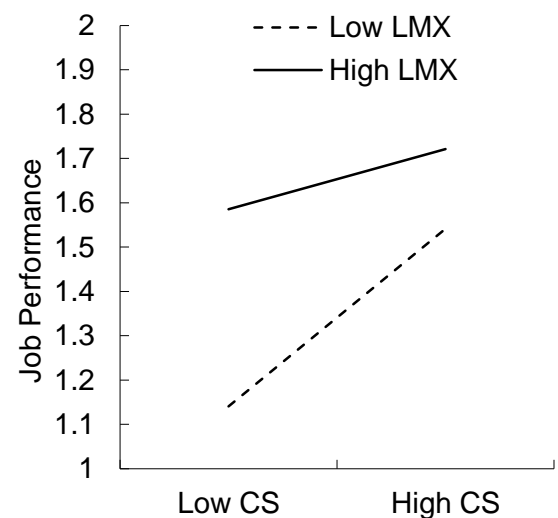
Table 4: Moderated Mediation Model Results

	Job Engagement	Job Performance
<i>Intercepts</i>	-.50 (.13)***	3.63 (.10)***
<i>Control variables</i>		
Age	.01 (.00)***	-.00 (.00)
Education	.11 (.04)**	-.01 (.03)
Hindrance Stressor	-.05 (.04)	.02 (.03)
<i>Independent variables</i>		
CS	.33 (.04)***	.25 (.04)***
<i>Mediator</i>		
JE		.41 (.05)***
<i>Moderator</i>		
LMX	.38 (.04)***	.07 (.04)†
<i>Interaction</i>		
CS × LMX	-.16 (.04)***	-.06 (.07)
JE × LMX		-.03 (.07)

Note. CS = Challenge Stressor; JE = Job Engagement; LMX = Leader-Member Exchange. The estimate is unstandardized coefficient and standard error is reported in parentheses.

†  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Figure 2: Leader-member exchange (LMX) moderates the mediation effect of job engagement between challenge stressor and job performance.



Second, to further determine whether LMX weakened the indirect relationship as predicted by Hypothesis 2, we considered an alternative moderated mediation model, including the first stage, second stage, direct, indirect, and total effects of the moderator (LMX). The results in Table 5 indicate a pattern consistent with our prediction with significant effects in the first stage effect (diffidence  $\beta = 0.20$ ,  $SE = 0.05$ ,  $p < 0.001$ ); therefore, Hypothesis 2 was supported.

Our research framework is a three-way interaction moderation model: we expected that PSM would moderate Hypothesis 2 such that PSM would enhance the moderated mediation. We conducted hierarchical regression analysis; the result is shown in Table 6. Model 5 in Table 6 shows that the three-way interaction effects of challenge stressors, LMX, and PSM have a significant positive effect on job engagement ( $\beta = 0.08$ ,  $SE = 0.04$ ,  $p < 0.05$ ). Figure 3 shows the three-way interaction between challenge stressors and job engagement, and we compared the pair of slope difference, and the results are shown in Table 7. As hypothesized, the lowest relationship between challenge stressors and job engagement occurs when LMX are high but PSM are low, and the highest levels of job engagement occurs when LMX are high and PSM are high. These findings support Hypothesis 3.

Table 5: Overview of Significant Moderated Mediation Effects

	First Stage Effect	Second Stage Effect	Direct Effect	Indirect Effect	Total Effect
Low_ LMX (-1SD)	.43 (.05)***	.43 (.07)***	.29 (.07)***	.18 (.04)***	.47 (.06)***
High_ LMX (+1SD)	.23 (.05)***	.39 (.06)***	.21 (.06)***	.09 (.03)**	.30 (.06)***
Diffidence	.20 (.05)***	.04 (.09)	.08 (.09)	.10 (.05)*	.17 (.08)*

Note. LMX = Leader-Member Exchange (SD= .63046). Standard errors are reported in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 6: Results of Three-Way Moderated Hierarchical Regression Analyses on Job Engagement

	Job Engagement				
	Model 1	Model 2	Model 3	Model 4	Model 5
Control Variable					
Age	.01 (.00)***	.01 (.00)**	.01 (.00)***	.01 (.00)***	.01 (.00)***
Education	.18 (.05)***	.11 (.04)**	.11 (.03)**	.10 (.03)**	.10 (.03)**
Hindrance Stressor	.01 (.04)	-.08 (.03)*	-.03 (.03)	-.04 (.03)	-.05 (.03)†
Independent Variable					
CS		.47 (.04)***	.31 (.03)***	.30 (.03)***	.29 (.03)***
Moderator					
LMX			.30 (.03)***	.31 (.03)***	.30 (.03)***
PSM			.21 (.04)***	.19 (.04)***	.16 (.04)***
Two-way Interaction					
CS × LMX				-.13 (.04)**	-.11 (.04)*
CS × PSM				.08 (.04)†	.13 (.05)**
LMX × PSM				-.10 (.04)*	-.09 (.04)*
Three-way Interaction					
CS × LMX × PSM					.08 (.04)*
R <sup>2</sup>	.08	.32	.50	.52	.53
F	14.51***	12.43***	81.17***	58.40***	53.50***
ΔR <sup>2</sup>		.24	.18	.02	.01
ΔF		170.70***	87.55***	6.89***	5.00*

Note. The regression coefficient is unstandardized coefficient and standard error is reported in parentheses. CS = Challenge Stressor; LMX = Leader-Member Exchange; PSM = Positive Stress Mindset.

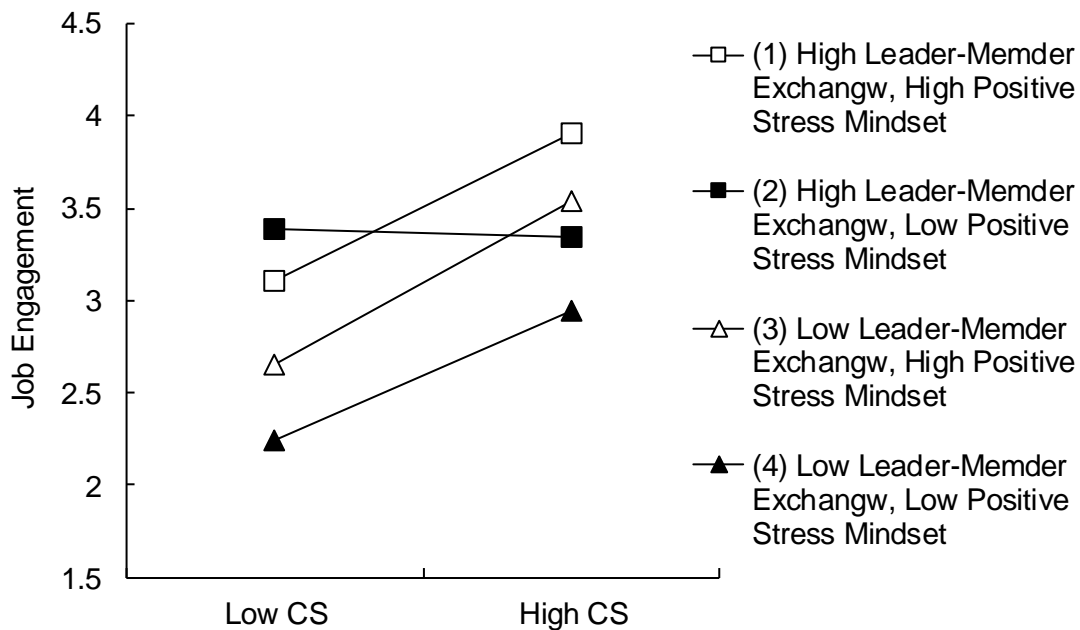
†  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 7: Results of Slope Difference Tests

Pair of Slopes	t-value	p-value
(1) High LMX high PSM and (2) High LMX low PSM	2.956	0.003
(1) High LMX high PSM and (3) Low LMX high PSM	-0.456	0.648
(1) High LMX high PSM and (4) Low LMX low PSM	0.492	0.623
(2) High LMX low PSM and (3) Low LMX high PSM	-3.021	0.003
(2) High LMX low PSM and (4) Low LMX low PSM	-3.414	0.001
(3) Low LMX high PSM and (4) Low LMX low PSM	1.486	0.138

Note. LMX = Leader-Member Exchange; PSM = Positive Stress Mindset.

Figure 3: Three-way interaction effects of challenge stressors (CS), leader-member exchange (LMX), and positive stress mindset (PSM) on job engagement.



## DISCUSSION

This study integrated the JDR model and substitutes for leadership and examined the moderating role of LMX and PSM in the relationship between challenge stressors and consequences. First, according to the JDR model viewpoint, job demands lead to job motivation and affects positive job performance. Our findings reveal that job engagement mediated the positive relationship between challenge stressors and job performance. Second, substitutes for leadership illustrate that if employees have sufficient capacity to meet the requirements of job demands, leadership behaviors are replaced. Figure 2 shows that mediation effect of job engagement between challenge stressors and job performance is stronger in low LMX situations.

Third, stress mindset can affect an individual's attitude and behaviors, even leadership behaviors are replaced, as long as the employee can hold a PSM, still can enhance employee's job engagement and improve job performance. According to Table 7, situations (2) compared

with situations (3), their slopes were significantly different, and the job engagement of situation (3) is higher than situation (2), which means high PSM is more effective than high LMX for employee job engagement. Moreover, situation (2) compared with and situation (1), both are high challenge stressors and high LMX situation, however employees who have a high PSM make an additional effect on job engagement. Finally, situations (2) compared with situations (4), even both are low PSM situations, but when the challenge stressors are higher in situation (2), the job engagement is lower, revealing that leadership behaviors were substituted.

### **Theoretical Implications**

Previous studies have emphasized that LMX has a social support role affecting the relationship between job demands and job performance (Loi, Ngo, Zhang, & Lau, 2011); or LMX can reduce the negative impact of stress (Thomas & Lankau, 2009). By contrast, fewer studies have explored the job resources that may interfere with employees engaging in work; indeed, sometimes the job resources may be unable to increase the positive impact of job demands. According to substitute for leadership theory, employee task knowledge may act as a substitute for a supervisor's leadership behavior. Additionally, our findings reveal that higher LMX hinders an employee's control of work tasks, thereby reducing their work engagement. Hence, we provide a new perspective, in particular for work stress issues, and our results show that job resources (e.g., LMX) may also have negative effects. Our results similar to Beehr et al. (2010), indicated that some social interactions may have potentially harmful effects.

Crum et al. (2013) introduced the concept of mindset into the stress issue; they suggested that if one's mindset is stress-is-enhancing, this leads to positive consequences; conversely, if one's mindset is stress-is-debilitating, this leads to negative outcomes. We agree with Crum et al. (2013) and argue that different stress mindsets can result in different behaviors. However, we do not agree with the methodological way they employed that treated stress mindset as a spectrum based on the degree of stress-is-enhancing or stress-is-debilitating. We divided stress mindset scale into two positive and negative factors, and the CFA result supported our idea. Therefore, we refined the Crum et al. (2013) stress mindset measures to provide future researchers with an alternative option.

### **Empirical Implications**

Our findings show that challenge stressor can lead to job engagement and enhance job performance. In practice, organizations should provide employees with a challenge stressor for growth opportunities, such as setting deadlines for task completion and increasing job responsibilities and task complexity. Meanwhile, leaders should be fully empowered to employees, do not excessively intervene in task decision-making process. Finally, organizations should assist employees to establish positive mindsets or develop their positive thinking by organizing learning activities or establishing psychological counseling units to help employees rethink the stressors they face—sometimes “a crisis is a chance.”

### **Limitations and Suggestions for Future Research**

Some research limitations exist in this study. First, our research variables were derived from employee self-reporting and may lead to common method variance concerns: in particular, job performance, which may have an inflation effect. We suggest future studies should use supervisor–employee dyad questionnaires to exclude common sources concerns. Second, we

divided the stress mindset scale into two factors without a pilot study to ensure the reliability of the scale. Although CFA shows that a two-factor model is preferred, we recommend that follow-up studies should categorize more rigorously. Third, this study only investigated challenge stressors and included hindrance stressors as the control variable, so future research could treat hindrance stressors as the research variable to complete the framework. Finally, our sample included only Taiwanese employees, so the results may be insufficient to generalize to other countries, suggesting that future research must increase the research sample to increase external validity.

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