

## What Differentiates Success From Strain: The Moderating Effects of Self-Efficacy

**Luo Lu and Yu-Yueh Chang**

*National Taiwan University*

**Steve Yuan-Lune Lai**

*The Nielsen Company*

---

*The present study aims at examining the moderating effects of self-efficacy on the stressor-strain relationships among Chinese employees. A self-administered survey method was used to collect data from 310 full-time employees across all regions in Taiwan. We found that interpersonal conflict and lack of autonomy as stressors were associated negatively with job satisfaction. Job performance was found to be associated negatively with lack of autonomy, but positively with workload. Regarding moderating effects, self-efficacy exacerbated a negative impact of lack of autonomy on job satisfaction but buffered a negative impact of lack of autonomy on job performance. Thus, the present study for the first time revealed that self-efficacy functioned as a double-edged sword in the work stress context of a Confucian Chinese society, contrary to what may be inferred from Western theoretical perspectives. In addition, this study also examined job performance as a strain variable which has rarely been studied in work stress research.*

---

*Keywords:* workload, interpersonal conflict, job autonomy, self-efficacy

The noxious impact of occupational stressors on employees' physical/mental health and job-related outcomes has been a widespread problem for employees, organizations, families, and the society. However, as many

---

This article was published Online First August 15, 2011.

Luo Lu and Yu-Yueh Chang, Department of Business Administration, National Taiwan University, Taiwan; Steve Yuan-Lune Lai, The Nielsen Company, Taiwan.

This research was supported by a grant from the National Science Council, Taiwan, ROC, NSC97-2410-H-002-201-MY3.

Correspondence concerning this article should be addressed to Luo Lu, Department of Business Administration, National Taiwan University, No.1, Sec. 4, Roosevelt Road, Taipei 106, Taiwan, ROC. E-mail: luolu@ntu.edu.tw

researchers argued, almost all occupational stress theories and research are developed and conducted in Western industrialized countries (Jamal, 1999; Siu, 2002; Xie, 1996). Thus, in order to generalize the extant findings of stress research, not only the direct relationships of the occupational stressors and strains but also the moderating effects need to be replicated in a considerably different culture, such as Taiwan, which is a Confucianism-dominated Chinese society.

### **THE DIRECT STRESSOR-STRAIN RELATIONSHIPS**

Ample Western studies have supported that workload, lack of autonomy, and interpersonal conflict are the salient work stressors and each is related significantly to psychological symptoms and physical health outcomes (Bruk-Lee & Spector, 2006; Karasek, 1979; Liu, Nauta, Spector, & Li, 2008; Narayanan, Menon, & Spector, 1999; Spector & Jex, 1998; Westman & Eden, 1992).

In a series of studies conducted in Taiwan, researchers also found that heavy workload, lack of autonomy, and interpersonal conflict at work are the most prevalent stressors for Taiwanese employees, which have detrimental effects on job satisfaction and associated psychological strain (Lu, 1997, 1999; Lu, Siu, & Lu, 2010). Furthermore, findings from a recent focused-group discussion study in Taiwan corroborated the above conclusion (Chang & Lu, 2007).

In addition to empirical studies mentioned above, the importance of these three stressors has been shown clearly in the Job Demand-Control (JCD) model (Karasek, 1979) and its more recent revision, the Job Demand-Control-Support (JDSC) model (Johnson & Hall, 1988; Johnson, Hall, & Theorell, 1989). Specifically, heavy workload reflects the quantitative demands, lack of work autonomy reflects the dearth of perceived control, and interpersonal conflict at work reflects the lack of support in the work environment. In the present study we thus focused on workload, lack of autonomy, and interpersonal conflict at work as stressors.

With regard to strain indicators, psychological strains such as job dissatisfaction and anxiety/tension have traditionally been the focus of work stress research; physical strains such as health or health-related behaviors are gaining attention recently (Du, Lin, Lu, & Tai, in press; Jex & Beehr, 1991). However, in their review of occupational stress literature, Cooper, Dewe, and O'Driscoll (2001) pointed out that behavioral changes, especially those related directly to job performance, are the least studied of all forms of strain, though they are the most important outcome from an organizational point of view. To respond to the appeal for the examination of behavioral indicators,

we adopted both job satisfaction and job performance as focal strain criteria in the present study.

### THE MODERATING EFFECTS OF SELF-EFFICACY

Objective stressors at work do not necessarily lead to the same psychological strain in every employee. As Lazarus and Folkman (1984) pointed out in their transactional model of stress, the process of stress is critically shaped by the person's initial appraisal of the situation and his or her subsequent coping efforts to manage the situation. Thus, individual characteristics or perceptions need to be considered while examining the relationship between stressors and strain. Researchers (Litt, 1988; Xie & Schaubroeck, 2001) have suggested that self-efficacy might be one of such critical moderators which may influence both the direction and the strength of relationships between stressors and strains. This personal characteristic has indeed been found to have direct effects on reducing job stressors and strains (Jex, Bliese, Buzzell, & Primeau, 2001; Schaubroeck & Merritt, 1997), but its presumed moderating effects have rarely been examined in the work stress context.

Bandura (1997) defined self-efficacy as the extent to which people believe they can perform a behavior to produce a particular desired outcome. Gibbons and Weingart (2001) differentiated three levels of personal efficacy beliefs: task-specific, domain, and general self-efficacy. We intend to examine the role of general self-efficacy, or termed simply self-efficacy, in this study. We believe that general self-efficacy, which refers to stable and global beliefs about one's competence, relates to one's ability to tackle job stressors. According to the transactional model of stress, stressors lead to strains only when employees appraise the stressors as threatening to their well-being. Self-efficacy may affect stress appraisal and thus can protect people against stress and reduce strains, as confirmed in aforementioned studies. Furthermore, some studies have found that self-efficacy exerts a moderating effect on stressor-strain relationships in Western societies (Jex et al., 2001; Salanova, Peiró, & Schaufeli, 2002; Schaubroeck, Lam, & Xie, 2000; Schaubroeck & Merritt, 1997). A most recent study with Italian rescue workers also found that self-efficacy moderated the relationship between stress appraisal and profession quality of life, defined as compassion fatigue, burnout, and compassion satisfaction (Prati, Pietrantonio, & Cicognani, 2010). Specifically, the relationship between stress appraisal and profession quality of life was significant only among rescue workers with low levels of self-efficacy but not among those with higher levels of self-efficacy. Although these results offer clear support for the theoretical propositions of the transactional model of

stress, their generalizability may be restrained by the study's focus on rescue workers and their unique working context as well as the exclusion of behavioral job performance indicators in measuring the quality of work life. We thus will examine the moderating effects of self-efficacy in a more diverse sample of workers and work settings as well as including job performance as a behavioral indicator of strain.

Thus far, extant studies in the West, though not many, seem to support the theoretical notion that self-efficacy may serve as a buffer because it affects the appraisal of and extent to which an employee will engage in behaviors to solve a problematic situation. It has been argued that individuals with high self-efficacy tend to use active or problem-focused coping strategy (Jex et al., 2001; Semmer, 2003). It is also possible that individuals with high self-efficacy are more likely to behold the belief of maintaining high levels of job performance in the presence of challenging job-related stressors. With the combination of firm beliefs in oneself to perform and increased exertion of efforts under stress, self-efficacy acts as a buffer mitigating the negative impact job stressors on employees' strains.

However, the buffering effect of self-efficacy on the stressor-strain relationships may be different in a Confucian society. For example, Siu, Spector, Cooper, Lu and Yu (2002) found that external locus of control (LOC) was a buffer of the stressor-mental well-being relation among Taiwanese managers; in contrast, the relationship between stressor and mental well-being was negative among managers with internal LOC. As Siu et al. (2002) pointed out that in an autocratic work environment such as that of Taiwan, internality in LOC may be counterproductive when people believe that they could inflict changes while in fact they cannot. Since self-efficacy shares the same belief in personal agency with internal LOC, it may well act as an exacerbator rather than a buffer on the relationships between stressors and strains in Taiwan. To better understand the possible moderating mechanisms of self-efficacy in a Chinese society, we need to "unpackage" the Confucian cultural values as they imprint on business life.

## **CONFUCIAN PHILOSOPHY AND ORGANIZATIONAL CULTURE IN TAIWAN**

In Hofstede's (1980) study of employees across 23 countries, Chinese were found to be very high in collectivist orientation. Collectivism is defined as emphasizing collective aspects of the self, giving priority to in-group goals, placing emphasis on norms more than on attitudes, and emphasizing on communal more than exchange relationships (Triandis, Chan, Bhawuk, Iwao, & Sinha, 1995). The Chinese collectivism has its roots in Confucianism

which is the dominant philosophical system influencing Chinese people for centuries. One of the basic principles of Confucian ethics pertaining to interpersonal relationships is “the principle of respecting the superior” (Hwang, 1988).

For most Taiwanese institutions, the organizational culture is characterized by paternalistic and autocratic values, legitimizing the hierarchically organized power structure. In accordance with the Confucian principle of respecting the superior, decision discretion is ascribed to those who occupy a superior position in a dyadic interaction (Hwang, 1988). In the business world, once the boss/superior has made decisions, employees are expected to obey and execute unconditionally. Consequently, decision latitude is low for Taiwanese employees and they reported rather low levels of perceived control at work (Chang & Lu, 2007; Lu, Wu, & Cooper, 1999).

As the organizational culture in Taiwan is considerably different from that in the Western societies which puts emphasis on individualism and encourages everyone to excel, some moderators may function differently in Taiwan. It is thus important to reexamine the role which self-efficacy plays on the Taiwanese stressor-strain relationships. However, one study did find a buffering effect of self-efficacy among managers in mainland China (Lu, Siu, & Cooper, 2005). With recent rapid social change and economic take-off, mainland Chinese are now the most “modern” in the Greater China region, while Taiwanese the most “traditional” (Leung & Bond, 2004; Lu, Kao, Chang, Wu, & Zhang, 2008). This subregional difference may explain why self-efficacy played a similar buffering role for mainland Chinese as that for Westerners. Furthermore, the Lu et al. study (2005) focused only on work attitude; whether/how self-efficacy may affect job performance remains unknown.

As empirical findings regarding the role of self-efficacy as a moderator for the Chinese people are scarce and inconsistent, it is challenging to hypothesize the exact nature of the moderating effects on the stressor-strain relationships for Taiwanese employees in the present study. However, we suspect that self-efficacy may act as a stress buffer for the hardworking Taiwanese employees through its emphasis on perseverance and a strong will to maintain performance under stress. A qualitative study has revealed that Taiwanese employees viewed generally the maintenance of their performance as a moral duty and a fulfillment of psychological contract with the organization (Chang & Lu, 2007). The possession of higher levels of self-efficacy should strengthen such a commitment to work tasks and may lead to better performance. On the other hand, we suspect that self-efficacy may act as a stress exacerbator for Taiwanese employees through its emphasis on control and problem-solving in any stressful situations. As analyzed earlier, Taiwanese work situations are so constructed as to grant low levels of control and autonomy to workers (Lu et al., 1999). For those with higher levels of self-efficacy, facing uncontrollable stressful situations may depress greatly

their work satisfaction, as there exists a clear misfit between psychological needs and environmental properties (Siu et al., 2002). Based on these partial evidence, we propose that self-efficacy may have differential moderating effects depending on indicators of strains. Specifically, we hypothesized that:

Self-efficacy beliefs will moderate the relationships between job stressors and strains in a way that the negative relationships between job stressors and job satisfaction will be exacerbated when the level of self-efficacy is high; and the negative relationships between job stressors and job performance will be mitigated when the level of self-efficacy is high.

In sum, the purpose of this study was mainly to investigate the potential moderating effects of self-efficacy on relationships of job stressors with job satisfaction and job performance among cultural Chinese employees in Taiwan. To reiterate, our hypothesis should be seen as tentative and exploratory. Another purpose was to reaffirm that workload, lack of autonomy and interpersonal conflict were salient job stressors for Taiwanese workers, impacting not only their work well-being, but also their work performance, which has rarely been used as a strain variable.

## METHOD

### Sample and Procedures

We used structured questionnaires to collect data from full-time employees located in northern, central, and southern parts of Taiwan. A total of 350 questionnaires were distributed by mail, mostly using divisional managers as contact persons for collecting data from their subordinates. A total of 310 completed responses were returned, constituting a response rate of 88.6%. The sample consisted of 121 men (39.2%) and 188 women (60.8%) with one unidentified. Respondents were aged between 20 and 62 years old ( $M = 33.77$ ,  $SD = 8.06$ ). There were 46.4% of married/cohabit respondents whereas 53.6% of respondents were single, divorced, or separated from their spouses. The educational level showed that 7.8% were high school graduates, 64.3% university/college graduates, 26% with master degrees and 1.6% of respondents with a doctorate degree. The sample had an average of 16.32 years of formal education ( $SD = 1.73$ ). The average job tenure within the current organization was 6.12 years ( $SD = 7.04$ ), ranging from 0.08 to 37 years. Most respondents (77.2%) were nonmanagerial employees, whereas 13%, 7.5%, and 2.3% were entry-level, middle-level, and senior-level managers respectively.

## Instruments

The questionnaire survey had five sections comprising measures of work stressors, self-efficacy, job satisfaction, job performance, and demographic background information used as control variables. The survey was administered in Chinese, and all the Chinese version scales have been used in previous studies with satisfactory reliability and validity. These references will be given along with the original English version when every scale is introduced below.

### Job Stressors

The three job-related stressors were measured by three different instruments. The workload and interpersonal conflict were measured by Quantitative Workload Inventory (QWI) and Interpersonal Conflict at Work Scale (ICAWS) respectively (Spector & Jex, 1998). The former contains five items concerning quantitative amount of workload by statements describing the amount of work. Respondents answered each statement by indicating the frequency of occurrence from 1 (*never happened*) to 5 (*always happening*). High sum of scores represents greater amount of workload. The ICAWS is a four-item scale designed to assess the nature of relationships the respondents withhold with their coworkers using identical 5-point Likert scale as QWI, and respondents were asked about how often each situation occurs. High sum of scores indicates more frequent conflict with colleagues. The lack of autonomy was assessed by the autonomy subscale in the Job Diagnostic Survey (JDS, Hackman & Oldham, 1975). Three statements enquiring the occurrence of high degree of independence and authority to exercise on time schedule and decision making were presented in the form of 5-point Likert scale as QWI. The higher sum of scores here represents a greater degree of autonomy on job, thus scored reversely to align with the previous two scales, representing higher stress. The Chinese versions of these three scales were used in Lu et al.'s study (2010) with good psychometric property. The Cronbach's alpha is .86 for workload, .74 for interpersonal conflict, and .86 for lack of autonomy in the present sample.

### Self-Efficacy

The 10-item General Self-efficacy Scale (Schwarzer, Babler, Kwiatek, Schroder, & Zhang, 1997) in the form of 6-point Likert scale from 1 (*absolutely incorrect*) to 6 (*absolutely correct*) was employed to assess

### **Self-Efficacy as a Double-Edged Sword**

403

general self-efficacy beliefs, defined as a comprehensive and stable sense of personal competence among employees in different occupations. The higher sum of scores represents a greater sense of general self-efficacy beliefs. The Chinese version was used in Lu et al.'s study (2005) with satisfactory psychometric property. The Cronbach's alpha for this scale is .93 in the present sample.

### **Job Satisfaction**

Job satisfaction was assessed by three items drawn from Michigan Organizational Assessment Questionnaire (MOAQ) developed by Cammann, Fichman, Jenkins, and Klesh (1979). The three statements assess the overall satisfaction with job and related work environment. The Chinese version of this scale was used in Lu et al.'s study (2010). The three items were utilized in a 5-point Likert scale form ranging from 1 (*never happened*) to 5 (*always happening*) and the higher sum of scores represents a greater satisfaction with job. The Cronbach's alpha for this scale is .86 in the present sample.

### **Job Performance**

Job performance was assessed along five different dimensions (quantity of work, quality of work, attendance, job knowledge, and getting along with others) using the Job Performance Scale (Viswesvaran, Ones, & Schmidt, 1996). The five items were rated on 5-point Likert scales from 1 (*very poor*) to 5 (*excellent*) and the higher sum of scores represents a higher comprehensive performance rating endorsed by employees themselves. The Chinese version of this scale was used in Lu et al.'s study (2010) with satisfactory reliability and validity. The Cronbach's alpha for this scale is .81 in the present sample.

### **Control Variables**

The control variables collected for this study included demographic information pertaining to sex, age, marital status (married, single, or divorced), education level (senior high school, college, master, or doctorate), tenure, and position (nonmanagerial, entry-level manager, middle-level manager, or senior-level manager) in the organization.

## RESULTS

Table 1 presents the means, standard deviations, and their interrelations. With regard to the stressor-strain relationships, interpersonal conflict and lack of autonomy correlated with job satisfaction, while lack of autonomy also correlated negatively with job performance. However, workload correlated positively with job performance. The moderator, self-efficacy, correlated positively with both job satisfaction and job performance.

A series of hierarchical regression analyses were conducted to test the moderating effects of self-efficacy on the stressor-strain relationships. The procedure suggested by Cohen and Cohen (1983) was used to demonstrate the statistical significance and form of the main and interaction terms. By controlling the effects of demographic factors, the following were entered in a hierarchical regression in the order below: Step 1: age, marital status, education years, job position, seniority; Step 2: stressors (workload, interpersonal conflict, and lack of autonomy); Step 3: moderator (self-efficacy); Step 4: stressor  $\times$  moderator. This procedure was repeated with two strain indicators (job satisfaction and job performance). Results are summarized below.

### Direct Effects of Stressors and Moderator

Results showed that sources of stress, and self-efficacy contributed significantly to both job satisfaction and job performance, except that workload was not a predictor for job satisfaction. Among these direct effects, a positive relationship between workload and job performance was found. Across job satisfaction and job performance, average standardize beta coefficients were: .123 (workload),  $-.354$  (lack of autonomy),  $-.201$  (interpersonal conflict), and .242 (self-efficacy).

### Moderating Effects of Self-Efficacy

We found that self-efficacy moderated the relationships between lack of autonomy and two strain indicators (full regression models shown in Table 2

**Table 1.** Interrelations Among Main Research Variables

	Mean	SD	1	2	3	4	5
1. Workload	17.54	3.31	—				
2. Interpersonal conflict	8.39	2.21	.31***	—			
3. Lack of autonomy	7.02	2.06	-.09	.21***	—		
4. Job satisfaction	10.96	2.12	-.06	-.36***	-.48***	—	
5. Job performance	18.29	3.05	.25***	-.10	-.37***	.33***	—
6. Self-efficacy	41.71	6.73	.18**	-.04	-.33***	.27***	.48***

\*\*  $p < .01$ . \*\*\*  $p < .001$ .

**Table 2.** Hierarchical Regression Analysis Predicting Job Satisfaction With Self-Efficacy as Moderator

Dependent variable		Job satisfaction			
Step	Predictors	$\beta$	$\beta$	$\beta$	$\beta$
1	Age	.003	-.053	-.046	-.048
	Marital status	.135	.124	.115	.104
	Education years	.035	.028	.010	.005
	Job position	.034	.020	-.006	-.012
	Seniority	.037	.009	.017	.024
2	Workload (WL)		-.015	-.034	-.024
	Lack of autonomy (LOA)		-.406***	-.367***	-.393***
	Interpersonal conflict (IC)		-.281***	-.276***	-.262***
3	Self-efficacy			.132*	.117*
4	WL $\times$ Self-efficacy				.044
	LOA $\times$ Self-efficacy				-.107*
	IC $\times$ Self-efficacy				.023
	Total $R^2$	.031	.314	.328	.342
	$\Delta R^2$	—	.284***	.014*	.014*
	Final $F$	1.833	16.435***	15.513***	12.258***

\*  $p < .05$ . \*\*\*  $p < .001$ .

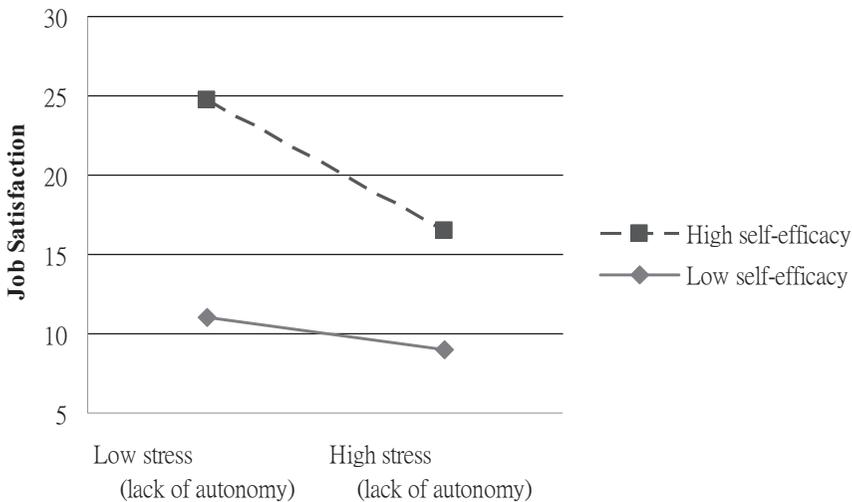
and Table 3). Following Cohen and Cohen (1983), the unstandardized regression coefficients (B) and constant of the moderated regression equation obtained at Step 4 were used to plot the regression of job satisfaction and job performance on self-efficacy at two levels of stress: high stress (+1 SD above the sample mean), and low stress (-1 SD below the sample mean).

Figure 1 shows that individuals with high levels of self-efficacy responded with much worse job satisfaction when lack of autonomy was high.

**Table 3.** Hierarchical Regression Analysis Predicting Job Performance With Self-Efficacy as Moderator

Dependent variable		Job performance			
Step	Predictors	$\beta$	$\beta$	$\beta$	$\beta$
1	Age	.116	.057	.074	.076
	Marital status	.032	.015	-.011	-.002
	Education years	.161	.173	.124	.129
	Job position	.086	.039	-.029	-.022
	Seniority	.029	.026	.045	.037
2	Workload (WL)		.260***	.208***	.198***
	Lack of autonomy (LOA)		-.302***	-.199***	-.174**
	Interpersonal conflict (IC)		-.121*	-.109*	-.123*
3	Self-efficacy			.352***	.367***
4	WL $\times$ Self-efficacy				-.040
	LOA $\times$ Self-efficacy				.109*
	IC $\times$ Self-efficacy				-.019
	Total $R^2$	.066	.238	.338	.351
	$\Delta R^2$	—	.172***	.099***	.014*
	Final $F$	4.109**	11.227***	16.167***	12.756***

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .



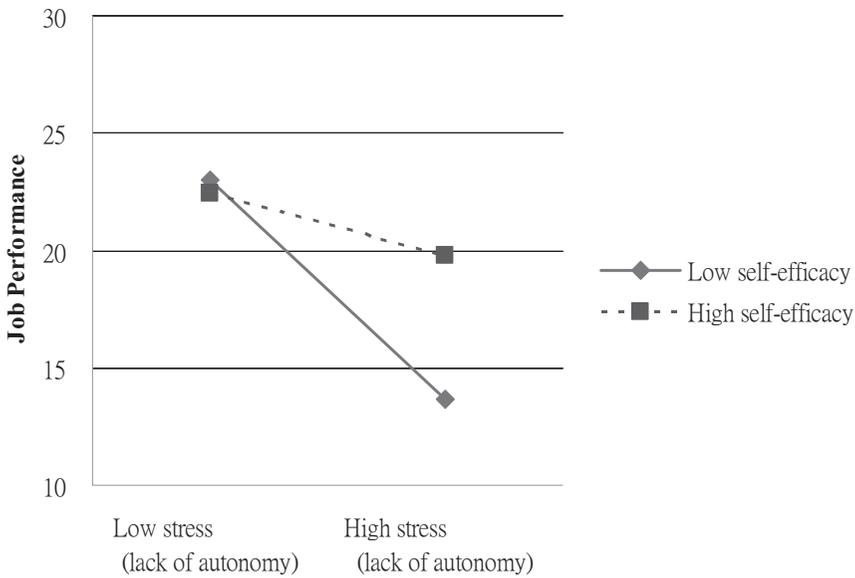
**Figure 1.** The moderating effect of self-efficacy on the lack of autonomy-job satisfaction relationship.

Figure 2 shows that individuals with high level of self-efficacy responded with much better job performance when lack of autonomy was high. In other words, self-efficacy exacerbated the negative impact of lack of autonomy on job satisfaction but buffered the negative impact of lack of autonomy on job performance. In addition, we examined whether the four slopes in Figures 1 and 2 are different from zero and whether the slopes of two pairs of simple regression lines do differ from each other. Following Aiken and West (1991), the results showed that each slope is significantly different from zero ( $t = -2.15, p < .01$  for low self-efficacy,  $SE$  and  $t = -2.12, p < .01$  for high  $SE$  in Figure 1;  $t = 2.04, p < .01$  for low  $SE$  and  $t = 2.06, p < .01$  for high  $SE$  in Figure 2); and the slopes of two pairs of simple regression lines also significantly differ from each other ( $t = -2.03, p < .01$  in Figure 1 and  $t = 2.10, p < .01$  in Figure 2).

## DISCUSSION

The purpose of this study was to reexamine the stressor-strain relationships as established by Western studies (e.g., Jex & Gudanowski, 1992; Spector & Jex, 1998; Tai & Liu, 2007) in Taiwan, and to extend the extant literature to explore the moderating effects of self-efficacy on the stressor-strain relationships. Results indicated similar as well as dissimilar patterns comparing to prior studies. First, interpersonal conflict and lack of autonomy both exhibited significant negative relationships with job satisfaction, which

**Self-Efficacy as a Double-Edged Sword**



**Figure 2.** The moderating effect of self-efficacy on the lack of autonomy-job performance relationship.

corroborated with previous studies on associations between interpersonal conflict and psychological strains (Beehr & McGrath, 1992; Narayanan et al., 1999), and between lack of autonomy and job satisfaction measured either in global or individual facets (Spector, 1986; Stansfeld, North, White, & Marmot, 1995). A significant negative relation between lack of autonomy and job performance was found, which was also in line with previous studies (Morgeson, Delaney-Klinger, & Hemingway, 2005; Zellars & Perrewée, 2001).

Second, although previous studies demonstrated when work quantity was perceived as an imbalance to individual’s capability it could lead to psychological strains and detrimental job satisfaction (Kushnir & Melamed, 1991; Westman & Eden, 1992), this association was not found in the present study. Instead, workload was actually found to have a positive association with job performance. Our results seem to suggest that workload may under some circumstances inspire and energize employees to thrive at work, corroborating Jex’s (1998) suggestion that workload might possess either positive or negative relationships with job performance for different people. A recent study conducted with a large heterogeneous sample of Chinese workers in Taiwan, Hong Kong, and mainland China also found a positive association between workload and self-reported job performance (Lu et al., 2010). Although evidence is still scarce, it does seem to support the notion of workload as a “challenge stressor” which was found to be positively related

to job satisfaction (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). This new revelation of workload as an energizer rather than a hindrance certainly warrants more examination in future studies.

Third, a significant moderating effect of self-efficacy on the lack of autonomy-job satisfaction relationship was unveiled and it indicated that self-efficacy actually exacerbated the negative impact of lack of autonomy on job satisfaction. Another significant moderating effect was also found involving lack of autonomy, indicating that self-efficacy buffered the negative impact of this stressor on job performance. These patterns represent clearly the role of self-efficacy as a double-edged sword portrayed in our hypothesis, but are inconsistent with existing Western findings. Such results need to be viewed from an *emic* Chinese cultural perspective.

In accordance with the Confucian tradition, most Taiwanese organizations institute a well-structured and rigid authorization system. From the perspective of high self-efficacy individuals, the gap between actual and desired level of job autonomy/control may damage their job satisfaction to a greater degree, as compared with those who are more in tuned with the dominant cultural value of obedience (Lu, 2006). In other words, individuals with higher self-efficacy may be more prone to distress when perceived control over their jobs is lower (lack of autonomy). Somehow to compensate for damped psychological well-being, people with high self-efficacy may double their efforts at work, to realize their firm beliefs on their capabilities to accomplish. Thus, the buffering effect on job performance was observed in this study. Taken together, self-efficacy performed as a double-edged sword for Taiwanese employees: exacerbating their psychological strain (e.g., job dissatisfaction) but protecting their work performance, when decision discretion at work was low.

It needs to be noted that while the protective direct effect of self-efficacy was consistent across job satisfaction and job performance, the moderating effects were only found pertaining to lack of autonomy as a stressor. Self-efficacy did not moderate the relationships between workload and interpersonal conflict as stressors and job satisfaction and job performance as strains. Furthermore, the magnitude of these statistically significant moderating effects was small, though interaction effects are routinely small and difficult to discern in work stress research (Cooper et al., 2001). Future studies are needed to replicate the “double-edged sword effect” of self-efficacy on other work stressors, and perhaps with samples from other Chinese societies.

One contribution of this study was the examination of moderating effects of self-efficacy on the stressor-strain relationships revealing its role as a double-edged sword in the Confucian Taiwan, contrary to what may be inferred from Western theoretical perspectives. As acknowledged above, the effective sizes associated with the interaction terms were relatively small, however, Evans (1985) did point out that moderator effects which explain a

very small portion of variance in a regression may still be meaningful. Thus the moderating effects found in this study should warrant further examination in the future, maybe in the context of other job stressors.

Another contribution of the present study is the inclusion of job performance as a strain variable which has rarely been examined in work stress research (Cooper et al., 2001). Even more interestingly, our results showed that the moderating effects of self-efficacy were entirely different for psychological strains and behavior outcomes. Including job performance as a behavioral indicator enriches our understanding of the stressor-strain relationships and highlights the importance of such outcome criterion from an organizational point of view.

It should be kept in mind that our data came from a cross-sectional study, so we cannot draw causal conclusions about the effects of stressors on strains. Furthermore, the single-source nature of the data raises possibilities of shared biases that may have affected observed relationships. Another limitation is that we did not recruit a representative sample due to limited time and resources; instead, we employed purposive sampling method. Although we controlled the number of questionnaires sent to any single company (the maximum is 15) and surveyed different regions across Taiwan, the generalization of research findings should still be cautious. Also, our explanations regarding the moderating effects are speculative. It is thus imperative that further investigations should not only incorporate individual difference factors such as self-efficacy, but also attempt to delineate the mechanisms with which these presumed moderators impact on the stressor-strain relationships. Of course, more research should be conducted in non-Western countries, as we have shown that culture may be an overarching explanatory framework in the work stress context.

In sum, we found that self-efficacy acted as both an exacerbator and a buffer on the stressor-strain relationships for cultural Chinese workers in Taiwan. Employees with high levels of self-efficacy experienced worse job satisfaction but better job performance in a paternalistic and autocratic work environment when decision latitude is low. Our results suggest caution in generalizing findings from the West to the East across cultural borders. More refined cultural analysis is thus called for.

## REFERENCES

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Beehr, T., & McGrath, J. (1992). Social support, occupational stress and anxiety. *Anxiety, Stress and Coping*, 5, 7–20. doi:10.1080/10615809208250484

- Bruck-Lee, V., & Spector, P. E. (2006). The social stressors-counterproductive work behaviors link: Are conflicts with supervisors and coworkers the same? *Journal of Occupational Health Psychology, 11*, 145–156. doi:10.1037/1076-8998.11.2.145
- Cammann, C., Fichman, M., Jenkins, D., & Klesh, J. (1979). *The Michigan Organizational Assessment Questionnaire*. Unpublished manuscript, University of Michigan Press.
- Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., & Boudreau, J. W. (2000). An empirical examination of self-reported work stress among U.S. managers. *Journal of Applied Psychology, 85*, 65–74. doi:10.1037/0021-9010.85.1.65
- Chang, K. C., & Lu, L. (2007). Characteristics of organizational culture, stressors and well-being: The case of Taiwanese organizations. *Journal of Managerial Psychology, 22*, 549–568. doi:10.1108/02683940710778431
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Cooper, C. L., Dewe, P., & O'Driscoll, M. P. (2001). *Organizational stress: A review and critique of theory, research and applications*. Thousand Oaks, CA: Sage.
- Du, C. L., Lin, M. C., Lu, L., & Tai, J. J. (in press). Correlation of Occupational Stress Index with 24-hour urine cortisol and Serum DHEA sulfate among city bus drivers: A cross-sectional study. *Safety and Health at Work*. doi:10.5491/SHAW.2011.2.2.169
- Evans, M. G. (1985). A Monte Carlo study of the effects of correlated method variance in moderated multiple regression analysis. *Organizational Behavior and Human Decision Process, 36*, 305–323. doi:10.1016/0749-5978(85)90002-0
- Gibson, D. E., & Weingart, L. R. (2001). Can I do it? Will I try? Personal efficacy, assigned goals, and performance norms as motivators of individual performance. *Journal of Applied Social Psychology, 31*, 624–648. doi:10.1111/j.1559-1816.2001.tb02059.x
- Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology, 60*, 159–170. doi:10.1037/h0076546
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.
- Hwang, K. K. (1988). *Confucianism and modernization in East Asia*. Taipei, Taiwan: Chu Liu Books.
- Jamal, M. (1999). Job stress, Type-A behavior and well-being: A cross-cultural examination. *International Journal of Stress Management, 6*, 57–67. doi:10.1023/A:1021962320645
- Jex, S. M. (1998). *Stress and job performance: Theory, research, and implications for managerial practice*. Thousand Oaks, CA: Sage.
- Jex, S. M., & Beehr, T. A. (1991). Emerging theoretical and methodological issues in the study of work-related stress. In G. R. Ferris & K. M. Rowland (Eds.), *Research in personnel and human resources management* (Vol. 9, pp. 311–364). Greenwich, CT: JAI.
- Jex, S. M., Bliese, P. D., Buzzell, S., & Primeau, J. (2001). The impact of self-efficacy on stressor-strain relations: Coping style as an explanatory mechanism. *Journal of Applied Psychology, 86*, 401–409. doi:10.1037/0021-9010.86.3.401
- Jex, S. M., & Gudanowski, D. M. (1992). Efficacy beliefs and work stress: An exploratory study. *Journal of Occupational and Organizational Psychology, 72*, 71–81. doi:10.1348/096317999166509
- Johnson, J. V., & Hall, E. M. (1988). Job strain, work place social support, and cardiovascular disease: A cross-sectional study of a random sample of the Swedish working population. *American Journal of Public Health, 78*, 1336–1342. doi:10.2105/AJPH.78.10.1336
- Johnson, J. V., Hall, E. M., & Theorell, T. (1989). Combined effects of job strain and social isolation on cardiovascular disease morbidity and mortality in a random sample of the Swedish male working population. *Scandinavian Journal of Work, Environment and Health, 15*, 271–279.
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly, 24*, 285–308. doi:10.2307/2392498

- Kushnir, T., & Melamed, S. (1991). Workload, perceived control and psychological distress in Type A/B industrial workers. *Journal of Organizational Behavior*, *12*, 155–168. doi:10.1002/job.4030120207
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York, NY: Springer.
- Leung, K., & Bond, M. H. (2004). Social axioms: A model for social beliefs in multicultural perspective. *Advanced Experimental Social Psychology*, *36*, 119–197. doi:10.1016/S0065-2601(04)36003-X
- Litt, M. D. (1988). Cognitive mediators of stressful experience: Self-efficacy and perceived control. *Cognitive Therapy and Research*, *12*, 241–260. doi:10.1007/BF01176188
- Liu, C., Nauta, M. M., Spector, P. E., & Li, C. (2008). Direct and indirect conflicts at work in China and the US: A cross-cultural comparison. *Work & Stress*, *22*, 295–313. doi:10.1080/02678370802573984
- Lu, L. (1997). The process of work stress: A dialogue between theory and research. *Chinese Journal of Mental Health*, *10*, 19–51.
- Lu, L. (1999). Work motivation, job stress and employees' well-being. *Journal of Applied Management Studies*, *8*, 61–72.
- Lu, L. (2006). Cultural fit: Individual and societal discrepancies in values, beliefs and subjective well-being. *Journal of Social Psychology*, *146*, 203–221. <http://dx.doi.org/10.3200/SOCP.146.2.203-221>; Border doi:<http://dx.doi.org/10.3200/SOCP.146.2.203-221>
- Lu, L., Kao, S. F., Chang, T. T., Wu, H. P., & Zhang, J. (2008). The individual- and social-oriented Chinese bicultural self: A sub-cultural analysis contrasting mainland Chinese and Taiwanese. *Social Behavior & Personality*, *36*, 337–346. doi:10.2224/sbp.2008.36.3.337
- Lu, L., Siu, O. L., & Cooper, C. L. (2005). Managers' occupational stress in China: The role of self-efficacy. *Personality and Individual Difference*, *38*, 569–578. doi:10.1016/j.paid.2004.05.012
- Lu, L., Siu, O. L., & Lu, C. Q. (2010). Does loyalty protect Chinese workers from stress? The role of affective organizational commitment in the Greater China region. *Stress & Health*, *26*, 161–168. doi:10.1002/smi.1286
- Lu, L., Wu, H. L., & Cooper, C. L. (1999). Perceived work stress and locus of control: A combined quantitative and qualitative approach. *Research and Practice in Human Resource Management*, *7*, 1–15.
- Morgeson, F. P., Delaney-Klinger, K., & Hemingway, M. A. (2005). The importance of job autonomy, cognitive ability, and job-related skill for predicting role breadth and job performance. *Journal of Applied Psychology*, *90*, 399–406. doi:10.1037/0021-9010.90.2.399
- Narayanan, L., Menon, S., & Spector, P. E. (1999). Stress in the workplace: A comparison of gender and occupations. *Journal of Organizational Behavior*, *20*, 63–73. doi:10.1002/(SICI)1099-1379(199901)20:1<63::AID-JOB873>3.0.CO;2-J
- Prati, G., Pietrantonio, L., & Cicognani, E. (2010). Self-efficacy moderates the relationship between stress appraisal and quality of life among rescue workers. *Anxiety, Stress & Coping*, *23*, 463–470. doi:10.1080/10615800903431699
- Salanova, M., Peiró, J. M., & Schaufeli, W. B. (2002). Self-efficacy specificity and burnout among information technology workers: An extension of the job demand-control model. *European Journal of Work and Organizational Psychology*, *11*, 1–25. doi:10.1080/13594320143000735
- Schaubroeck, J., Lam, S., & Xie, J. L. (2000). Collective efficacy versus self-efficacy in coping responses to stressors and control: A cross-cultural study. *Journal of Applied Psychology*, *85*, 512–525. doi:10.1037/0021-9010.85.4.512
- Schaubroeck, J., & Merritt, D. E. (1997). Divergent effects of job control on coping with work stressors: The key role of self-efficacy. *Academy of Management Journal*, *40*, 738–754. doi:10.2307/257061
- Schwarzer, R., Babler, J., Kwiatek, P., Schroder, K., & Zhang, J. X. (1997). The assessment of

- optimistic self-beliefs: Comparison of the German, Spanish, and Chinese versions of the General Self-efficacy Scale. *Applied Psychology: An International Review*, 46, 69–88. doi:10.1111/j.1464-0597.1997.tb01096.x
- Semmer, N. (2003). Individual differences, work stress and health. In M. J. Schabracq, J. A. M. Winnubst, & C. L. Cooper (Eds.), *Handbook of work and health psychology* (2nd ed., pp. 83–120). Chichester, U.K.: Wiley.
- Siu, O. L. (2002). Occupational stressors and well-being among Chinese employees: The role of organizational commitment. *Journal of Managerial Psychology*, 14, 6–25. doi:10.1108/02683949910254675
- Siu, O. L., Spector, P. E., Cooper, C. L., Lu, L., & Yu, S. F. (2002). Managerial stress in Greater China: The direct and moderate effect of coping strategy and work locus of control. *Applied Psychology: An International Review*, 51, 608–632. doi:10.1111/1464-0597.00111
- Spector, P. E. (1986). Perceived control by employees: A meta-analysis of studies concerning autonomy and participation at work. *Human Relations*, 39, 1005–1016. doi:10.1177/001872678603901104
- Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal conflict at work scale, organizational constraints scale, quantitative workload inventory, and physical symptoms inventory. *Journal of Occupational Health Psychology*, 3, 356–367. doi:10.1037/1076-8998.3.4.356
- Stansfeld, S. A., North, F. M., White, I., & Marmot, M. G. (1995). Work characteristics and psychiatric disorder in civil servants in London. *Journal of Epidemiology Community Health*, 49, 48–53. doi:10.1136/jech.49.1.48
- Tai, W. T., & Liu, S. C. (2007). An investigation of the influences of job autonomy and neuroticism on job stressor-strain relations. *Social Behavior and Personality*, 35, 1007–1020. doi:10.2224/sbp.2007.35.8.1007
- Triandis, H. C., Chan, D. K., Bhawuk, D., Iwao, S., & Sinha, J. B. P. (1995). Multimethod probes of allocentrism and idiocentrism. *International Journal of Psychology*, 30, 461–480. doi:10.1080/00207599508246580
- Viswesvaran, C., Ones, D. S., & Schmidt, F. L. (1996). Comparative analysis of the reliability of job performance ratings. *Journal of Applied Psychology*, 81, 557–574. doi:10.1037/0021-9010.81.5.557
- Westman, M., & Eden, D. (1992). Excessive role demand and subsequent performance. *Journal of Organizational Behavior*, 13, 519–529. doi:10.1002/job.4030130507
- Xie, J. L. (1996). Karasek's model in the People's Republic of China: Effects of job demands, control, and individual differences. *Academy of Management Journal*, 39, 1594–1618. doi:10.2307/257070
- Xie, J. L., & Schaubroeck, J. (2001). Bridging approaches and findings across diverse disciplines to improve job stress research. In P. L. Perrewé & D. C. Ganster (Eds.), *Exploring theoretical mechanisms and perspectives* (pp. 1–61). Bingley, UK.: Emerald Group Publishing Limited. doi:10.1016/S1479-3555(01)01009-5
- Zellars, K. L., & Perrewé, P. L. (2001). Affective personality and the content of emotional social support: Coping in organizations. *Journal of Applied Psychology*, 86, 459–467. doi:10.1037/0021-9010.86.3.459