1-1-2002

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Recommended Citation

Siu, O.-l. (2002). Occupational stressors and well-being among Chinese employees: The role of organisational commitment. Applied Psychology, 51(4), 527-544. doi: 10.1111/1464-0597.t01-1-00106

This is the post-printed version of an article. The final published version is available at Applied Psychology: An International Review 51:4 (2002); doi: 10.1111/1464-0597.t01-1-00106
ISSN 0269-994X (Print) / 1464-0597 (Online)

Occupational Stressors and Well-being among Chinese Employees: The Role of Organisational Commitment

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This paper examines occupational stressors and well-being for blue- and white-collar occupations with Chinese and Hong Kong samples using standardised instruments validated in Western research. The study demonstrates that occupational stressors play a significant role in determining job satisfaction, mental and physical well-being. The reliability of standardised instruments used in Western research (including the Occupational Stress Indicator-2 [Williams & Cooper, 1996] and Organizational Commitment Questionnaire [Mowday, Steers, & Porter, 1979]) is demonstrated. The results of the study show that organisational commitment and well-being are positively related. A number of hierarchical regressional analyses (Cohen & Cohen, 1983) are used to demonstrate the moderating effects of organisational commitment in the stress outcomes that are evidenced in Western societies. The replication of research with Chinese subjects contributes to the generalisability of theories in organisational psychology.

INTRODUCTION

Occupational stress has been noted as an increasing problem for employees. Evidence has been presented to suggest that occupational stress is related to mental and physical well-being, job satisfaction, absenteeism, turnover rate and intent to quit (Ganster & Schaubroeck, 1991; Sullivan & Bhagat, 1992). One of the most damaging effects of work stress is its impact on the economy. It is estimated that US industry loses about 550 million working days each year due to absenteeism, and 54 per cent of them are in some way stress related (Elkin & Rosch, 1990). Cooper and Cartwright (1996) estimated that overall 360 million working days are lost in the UK annually through sickness; out of which about half are stress related.

Therefore it is important to identify the potential occupational stressors, and to find variables which have beneficial consequences for both employees and organisations. Chiu and Kosinski (1995) argued that stress is influenced by cultural and social variables such as values, attitudes, and perception. One important attitudinal variable as such is organisational commitment. Sommer, Bae, and Luthans (1996) contended that organisational commitment is one of the important variables in the study of employee behavior since it is inversely related to employee tardiness and absence (e.g. Cohen, 1993); moreover, highly committed employees have higher productivity and are willing to assume responsibility (Chow, 1990).

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Moreover, organisational commitment has also been found to be a stress moderator (e.g. Begley & Cazjka, 1993). The mechanism might be that, due to their positive attitudes, committed employees are less distressed by occupational stressors and therefore they perceive less stress.

It has been argued that almost all work stress research and theories were developed and empirically tested in Western industrialised countries (Jamal, 1999; Xie, 1996). It is therefore important to replicate job stress research in Chinese societies in order to test the generalisability of Western organisational theories.

Since 1979, China has made great progress in economic reforms, and the average annual real economic growth in 1979–93 was 9.3 per cent; in the same period Hong Kong achieved 7.4 per cent growth. More recently, the GDP annual growth rates of China and Hong Kong in 1997 were 8.8 per cent and 5.3 per cent, respectively. Given this continued rapid growth it is not surprising that studies have revealed high levels of stress in Hong Kong and China (Siu, Cooper, & Donald, 1997; Siu & Cooper, 1998; Siu & Donald, 1996; Yu, Sparks, & Cooper, 1998). These studies demonstrate the need to examine further occupational stressors and well-being, and the role of organisational commitment in workers in Hong Kong and China.
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OCCUPATIONAL STRESSORS AND WELL-BEING AMONG BLUE- AND WHITE-COLLAR WORKERS

Cooper, Sloan, and Williams (1988) developed the Occupational Stress Indicator (OSI) and demonstrated that stressful transactions are seen as a product of two intervening systems: people both exert impact on and respond to their environments. In other words, the process of stress depends on the person's role in appraising the situation which is what determines whether the

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situation is a stressor or not. Stress occurs when the magnitude of the stressor exceeds the individual's capacity to resist. For instance, workload is a stressor or something that causes a person to feel stressed when he/she thinks that he/she is unable to cope with the large workload. Six sources of stress, or occupational stressors, were categorised in the OSI: factors intrinsic to the job, management role, relationships with others, career and achievement, organisational structure and climate, and home/work interface. Cooper and Cartwright (1996) reiterated that these are the main sources of stress at work, arguing that they are applicable to different occupations.

It has been argued that factors intrinsic to the job are often included in blue-collar studies, and extra-organisational sources of stress tend to be restricted to studies of white-collar managers (e.g. Fisher, 1985). However, Wallace, Levens, and Singer (1988) concluded that many of the managerial stressors are relevant to all workers, and therefore are also applicable to blue-collar workers. Occupational stressors in this study are conceptualised as the total pressures arising from the proposed six stressors.

Warr (1987) categorised those concepts such as job satisfaction, organisational commitment, job-related tension, job-related depression, job-related burnout, and morale as job-related well-being. The variables measuring well-being in the present study include job satisfaction, physical and mental well-being.

Some studies using the OSI have demonstrated that stressors at work are negatively related to workers' job satisfaction and well-being in Western and Chinese societies (Fotinatos-Ventouratos & Cooper, 1998; Lu, Shiau, & Cooper, 1997; Bogg & Cooper, 1995; Robertson, Cooper, & Williams, 1990; Siu, Cooper, & Donald, 1997; Yu, Sparks, & Cooper, 1998). For instance, Fotinatos-Ventouratos and Cooper (1998) demonstrated that "organizational structure and climate" was a significant predictor of job satisfaction among workers of different social classes. Furthermore, they found that "factors intrinsic to the job" was a common significant predictor of mental and physical health among workers from upper-middle-class/professional occupations, middle-class/professional and semi-professional, and lower-middle-class/non-manual "white-collar" occupations; whereas "relationships with others" was a common significant predictor of mental and physical health among workers from the skilled working-class/manual "blue-collar" occupations, or the semi-skilled and unskilled working-class/manual workers.

In a study using TV employees in Hong Kong, Siu et al. (1997) found that "relationships with others" and "organisational structure and climate" are predictors of job satisfaction, and "managerial role" is a predictor of both mental and physical health. These results are similar to those obtained by Bogg and Cooper (1995). However, both these studies used white-collar workers. The present study will replicate the study of the relationship between occupational

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stressors and well-being in samples of both white- and blue-collar workers in Hong Kong and China.

ORGANISATIONAL COMMITMENT AS STRESS MODERATOR

Organisational commitment is defined as "the relative strength of an individual's identification with and involvement in an organization" (Mowday, Porter, & Steers, 1982, p. 26). This conception of commitment consists of three facets: an acceptance of the organisation's goals, a willingness to work hard for the organisation, and the desire to stay with the organisation. More recently, a three-component conception of commitment has been developed, including affective, continuance, and normative commitment (Meyer & Allen, 1991). Research with their scale has found support for these three types of commitment being separate variables (Dunham, Grube, & Castaneda, 1994; Meyer, Allen, & Smith, 1993). It has been argued that the Mowday, Steers, and Porter (1979) scale assesses mainly affective commitment, which correlates strongly with the affective commitment subscale but not with the continuance or normative subscales (Hackett, Bycio, & Hausdorf, 1994).

Recently, organisational commitment has been identified as a significant moderator of work stress (Begley & Cazjka, 1993; Cohen, 1992, 1993; Mathieu & Zajac, 1990; Mowday, Porter, & Steers, 1982; Somers, 1995). As mentioned earlier, the stress process depends on the person's role in appraising the stressor, and organisational commitment is a "person" factor. For instance, Begley and Cazjka (1993) tested empirically the moderating effects of organisational commitment, and concluded that commitment buffered the relationship between stress and job displeasure (including job dissatisfaction, intent to quit, and irritation). That means, stress increased job displeasure only when commitment was low.

It has been argued that commitment is relevant in China, and therefore organisational commitment is one of the characteristics of the Chinese workforce. Chao (1990) suggested that Confucian values of loyalty, paternalistic authority, cohesion, and altruism are present in Chinese organisations. He argued that employee commitment to the organisation is the result of a paternalistic form of management and cultural norms of trust, subtlety, and loyalty. Empirically, there is some support for this Confucian value, with studies finding that the level of organisational commitment reported for Chinese managers is higher than their counterparts of other nationalities (Chow, 1990; Perrewe', Ralston, & Fernandez, 1995).

Given this characteristic of Chinese workers, it would be expected that organisational commitment has the potential to be a significant moderator of occupational stressors. Siu and Cooper (1998) demonstrated the moderating effect of organisational commitment in their sample of white-collar employees in Hong Kong. Yet, research evidence on Chinese blue-collar workers is rare.

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Examining such non-Western populations will add to the generalisability of research findings in the area.

As Akhtar and Tan (1994) argued, continuous commitment is a consequence rather than a constituent of organisational commitment, and it has been found that normative commitment has a significant positive effect on experienced burnout (Tan & Akhtar, 1998). Since affective commitment has been found to be related to managerial effectiveness and organisational effectiveness (e.g. Luthans, McCaul, & Dodd, 1985; Nyhan, 1999), the present study will mainly look at the beneficial consequences of affective commitment.

THE PRESENT STUDY

The purposes of the study are: (a) to investigate the relationship between sources of stress and well-being in a Chinese white- and blue-collar sample; and (b) to examine the role of organisational commitment as a stress moderator.

The theoretical framework of the study is modified from the OSI (Cooper et al., 1988), and is depicted in Fig. 1. In this model, occupational stressors are related to well-being, and the experience of stress is moderated by organisational commitment.

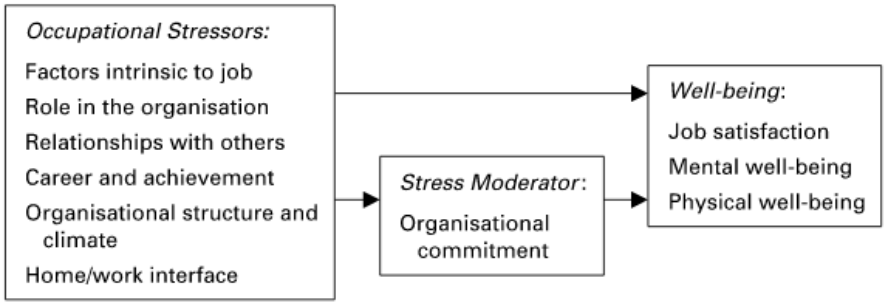

FIGURE 1. Theoretical framework for the study.

Hypotheses

Hypothesis 1. Workers who report higher levels of pressure arising from occupational stressors report worse well-being (lower job satisfaction; poorer mental well-being and physical well-being)

Hypothesis 2. Highly committed workers report better well-being (higher job satisfaction; better mental and physical well-being)

Hypothesis 3. Organisational commitment moderates stressor–well-being relationships in a positive direction (for committed workers, stressors and well-being are positively related; and for non-committed workers, stressors and well-being are negatively related).

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Methodology

Participants. The sample for the study included 158 white-collar and 138 blue-collar workers in Hong Kong, and 372 blue-collar workers in China. The white-collar sample for the study was drawn from employees from the property management field, computer professionals, and a commercial bank in Hong Kong. The rationale for choosing subjects from these occupational groups is that since Hong Kong is a commercial and financial center, these occupational groups are therefore quite representative.

Manufacturing industry once comprised the largest blue-collar workforce in Hong Kong. In the last decade or so this industry group has suffered a steep decline as many factory owners have moved their businesses to cities in southern China, especially in Guangdong Province. It is estimated that there are now more than 3 million workers in the manufacturing sector around the Pearl River Delta area, which is far greater than the manufacturing workforce of Hong Kong which had declined to barely 250,000 by 1998. Thus, the author had to draw a higher proportion of blue-collar workers from China than from Hong Kong.

It must be stressed that the present study is not a comparison study between Hong Kong and China, but rather a study conducted in both places in order to yield international replications, so as to generate convergent validity.

Procedures

The self-administered questionnaire survey method was employed to collect the data. A more detailed description of the data collection procedure in each occupational group is provided in the following paragraphs.

White-collar Group. The data were collected from May to June 1996. A total of 65 completed questionnaires were collected from staff working in four property management companies in Hong Kong through a designated manager in each company, with a response rate of 60 per cent. In the sample of computer professionals, a total of 51 completed questionnaires were collected from three companies through a designated person in each company, yielding a 69 per cent response rate. Further, a total of 44 questionnaires were collected from one commercial bank in Hong Kong through a designated manager, with a response rate of 88 per cent. These three subgroups make up a total sample of 158 employees in the white-collar group.

Blue-collar Group. The data were collected from four sites in China from May to July 1996. The data collection in a garment factory in Xiaolan was achieved by delivering the questionnaires to a designated supervisor of the chosen factory by the author. Briefing on the questionnaire administration was also conducted by the author, and the completed questionnaires were collected

one week later. Data collection in a textile factory in Hangzhou, a textile factory in Zhanjiang and a garment factory in Panyu, China, was conducted in the same way by a colleague of the author. The response rates were 100 per cent, 93.7 per cent, 88.8 per cent, and 50 per cent, respectively. These four subgroups make up a total sample of 372 employees in the blue-collar group in China.

For the blue-collar sample in Hong Kong, data were collected from eight factories through a designated person in each chosen factory from June to August 1996. The factories were chosen by a convenience sampling method, from different industrial areas in Hong Kong. For some small factories, all of the workers in the factories were invited to participate in the study. The response rates ranged from 40 per cent to 100 per cent. A total of 138 blue-collar workers in Hong Kong was achieved.

Instruments

The Occupational Stress Indicator-2 (OSI-2) (Williams & Cooper, 1996) and Organizational Commitment Questionnaire (OCQ) (Mowday et al., 1979) were used as the main instruments for the study.

The OSI-2 is a shortened version of the OSI. The OSI has obtained established reliability and validity in previous studies in Western (Cooper & Williams, 1991; Robertson et al., 1990) and Chinese societies (Siu et al., 1997; Lu et al., 1997). The reliability and validity of the OSI-2 have also been demonstrated in Western and Chinese societies (Spector et al., 2001; Siu & Cooper, 1998). Four parts of the OSI-2 were used to measure sources of stress, job satisfaction, and both mental and physical well-being in this study. Recently, Williams and Cooper (1998) have demonstrated that their Pressure Management Indicator, which consists of these four scales, is a standard, reliable, compact, and comprehensive second-generation instrument.

There are many ways to measure organisational commitment. As organisational commitment is conceptualised as an affective attitude to work in this study, the Organizational Commitment Questionnaire (OCQ) (Mowday et al., 1979) which gives a global measure of affective commitment is adopted for the study. The OCQ is a very frequently used scale and it has a great deal of construct validation evidence in some Western (e.g. Sommer et al., 1996) and Asian societies (Leong, Furnham, & Cooper, 1996; Siu & Cooper, 1998).

Measures

Independent Variables.*Occupational Stressors.* There are 40 items in the Sources of Stress Scale of the OSI-2. To avoid a too lengthy questionnaire, the number of items of this scale was reduced. Twenty items were extracted for use from this scale which measured the six sources of stress. They were items 3, 4, 5, 7, 8, 10, 12, 13, 14, 15, 16, 17, 18, 20, 25, 31, 34, 37, 39, 40 of the original scale. The

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rationale for choosing these items is that they are applicable to both blue-collar and white-collar employees in the Chinese context. Example items are: factors intrinsic to the job (e.g. having to work long hours), management role (e.g. conflicting job tasks and demands in the role I play), relationships with others (e.g. lack of social support by people at work), career and achievement (e.g. under promotion—working at a level below my level of ability), organisational structure and climate (e.g. morale and organisational climate), home/work interface (e.g. demands my work makes and its conflicting demands on my relationship with spouse/children). Respondents were asked to indicate whether an item was a source of pressure on a 6-point scale ranging from "very definitely a source" (6) to "very definitely not a source" (1). The score of the index for occupational stressors is the summation of scores of all six stressors (high score = higher level of pressures that arise from occupational stressors).

Moderator Variables.

Organisational Commitment. The 9-item Organizational Commitment Questionnaire (OCQ) (excluding the negative items) (Mowday et al., 1979) consists of a 7-point scale ranging from "strongly agree" (7) to "strongly disagree" (1) (high score = high commitment). The rationale for using the 9-item OCQ is based on two reasons: (a) to reduce the length of the questionnaire, (b) the negatively worded items lack stability (Tetrick & Farkas, 1988). Example items are: "I am proud to tell others that I am part of this organisation"; "I really care about the fate of this organisation".

Demographics factors. The demographic variables under study included age, gender, and marital status.

Dependent Variables. Three parts of the Occupational Stress Indicator-2 (OSI-2) (Williams & Cooper, 1996) were used to measure well-being.

Job satisfaction. Job satisfaction refers to a pleasurable emotional state resulting from the appraisal of one's job or the organisation. This was measured using the Job Satisfaction Scale of the OSI-2. This is a 12-item scale. Only the first 11 items were used because item 12 was very similar to item 9 after being translated into Chinese, so item 12 was deleted. Each item is rated on a 6-point scale ranging from "very satisfied" (6) to "very dissatisfied" (1) (high score = high satisfaction). Example items are: "The actual job itself"; "The degree to which your job taps the range of skills which you feel you possess".

Mental well-being. Mental well-being refers to psychological health, including contentment, resilience, and peace of mind. Part A (How you feel or behave) of Section 2 (How you assess your current state of health) of the OSI-2 was used to measure mental health. It consists of 12 items scoring from 6 to 1, in which numbers 3, 5, 8, and 11 are negative items. An example of a positive

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item is: "Would you say that you tended to be a rather over conscientious person who worries about mistakes or actions that you may have taken in the past, such as decisions?" (from "very true" to "very untrue") (High score = better mental well-being). An example of a negative item is: "When the pressure starts to mount at work, can you find a sufficient store or reserve of energy which you can call upon at times when you need it that spurs you into action?" (from "lots of energy" to "not much energy").

Physical well-being. Physical well-being refers to physical state of health, including calmness and energy. Part B (Your physical health) of Section 2 of the OSI-2 was used to measure physical health. There are 6 items in this scale scoring from 6 to 1 (High score = better physical well-being). Example items are: "Feeling unaccountably tired or exhausted"; "Shortness of breath or feeling dizzy".

The questionnaire was originally developed in English in the UK and US. All of the items in the questionnaire were translated into Chinese by the author and back-translated into English by a professional translator to assure equivalence. Words that were improperly translated were retranslated and retested until the Chinese version matched the original English.

ANALYSIS AND RESULTS

Sample Characteristics

For the Hong Kong white-collar group, there were more males than females, with a mean age of 33 years (SD = 12.96 years). About 89 per cent of this group had secondary or above education. There were almost equal numbers of single and married employees. The mean current job experience was about 3 years; and the mean total working experience was about 11 years.

For the Hong Kong blue-collar group, there were almost equal numbers of males and females, with a mean age of 33 years (SD = 14.47 years). About 72 per cent of this group had secondary or above education. There were more married than single workers in this group. The mean current job experience was about 5 years; and the mean total working experience was 13 years.

For the China blue-collar group, there were far more females than males, with a mean age of 25.5 years (SD = 12.24 years). About 73 per cent of this group had secondary or above education. There were more single workers than married workers in this group. The mean current job experience was about 4 years; and the mean total working experience was about 7 years.

Reliability of Measures

The reliabilities for all measures in all samples are acceptable except mental well-being for the

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China blue-collar group (see Table 1). It seems that the internal consistencies were maintained across most translations. These provide evidence of scale equivalence of measures across cultural groups (Riordan & Vandenberg, 1994). So all measures are generally reliable; it seems that the alphas for the well-being variables are lower for both the blue-collar samples. It is possible that these scales, particularly the mental well-being measures, include higher level of vocabulary. This might explain why the results produced are more random for less educated blue-collar workers.

Table 1. Means, Standard Deviations, Reliabilities, and Inter-correlations for All Measures

	Mean	*SD*	*Alpha*	*OS*	*M*	*P*	*JS*	*OC*
Hong Kong White-Collar Workers (*N*= 158):								
Occupational Stressors (OS)	65.80	14.71	0.93	–				
Mental well-being (M)	47.11	9.32	0.77	−0.39***	–			
Physical well-being (P)	22.91	5.97	0.85	−0.37***	0.62***	–		
Job Satisfaction (JS)	38.77	10.71	0.95	−0.42***	0.54***	0.60***	–	
Organisational Commitment (OC)	36.85	10.69	0.93	−0.20**	0.35***	0.52***	0.70***	–
Hong Kong Blue-Collar Workers (*N*= 138):								
Occupational Stressors (OS)	59.08	12.47	0.80	–				
Mental well-being (M)	43.79	6.55	0.62	−0.05	–			
Physical well-being (P)	23.00	4.95	0.71	−0.17*	0.46***	–		
Job Satisfaction (JS)	38.05	9.10	0.90	−0.13	0.14	0.21*	–	
Organisational Commitment (OC)	37.74	9.39	0.87	0.04	0.14	−0.01	0.61**	–
China Blue-Collar Workers (*N*= 372):								
Occupational Stressors (OS)	57.81	11.75	0.82	–				
Mental well-being (M)	46.78	8.69	0.57	−0.17***	–			
Physical well-being (P)	24.54	4.49	0.61	−0.14***	0.37***	–		
Job Satisfaction (JS)	44.63	8.94	0.86	0.04	0.27***	0.15**	–	
Organisational Commitment (OC)	44.77	8.09	0.76	0.01	0.30***	0.17***	0.49***	–

Note: * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

Relationships between Occupational Stressors and Well-being

Table 1 depicts the correlation coefficients between the stressors and well-being (including job satisfaction, physical and mental well-being) in the three national and occupational groups. It can be seen from Table 1 that occupational stressors were negatively related to physical well-being (in all groups), mental well-being (except in the Hong Kong blue-collar group), and job satisfaction (in the white-collar group only). Therefore the first hypothesis can be partially supported.

Organisational Commitment and Employee Well-being

Table 1 presents the correlation coefficients between organisational commitment and well-being. Organisational commitment was found to be positively related to physical well-being (except in the Hong Kong blue-collar group), job satisfaction, and mental well-being (except in the Hong Kong blue-collar group). Therefore the second hypothesis is partially supported.

Moderating Effects of Organisational Commitment

To examine the moderating effects of organisational commitment in the stressor–well-being relationships, the hierarchical regression procedure suggested by Cohen and Cohen (1983) was used to test the significance and form of the main and interaction terms. To determine the joint contribution of stressors and organisational commitment on three outcome variables, occupational

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stressors were entered first into the regression equation, followed by organisational commitment, and then stressors × organisational commitment (see Table 2).

TABLE 2
Hierarchical Regression Analysis with Organisational Commitment as Moderator (with Occupational Stressors as Independent Variable)

Health effects	*Step*	*Entered variable*	R^2	ΔR^2	*df*	F-*ratio*	*beta*
Hong Kong White-Collar Group (N = 158):							
Job Satisfaction	1	OS	0.173	0.173	156	32.63***	−0.42***
	2	Com	0.564	0.391	154	99.47***	0.65***
	3	OS × Com	0.616	0.052	153	81.91***	1.24***
		Constant = 70.03***					
Mental Well-being	1	OS	0.156	0.156	156	28.80***	−0.39***
	2	Com	0.230	0.074	154	22.99***	0.29***
	3	OS × Com	0.239	0.009	153	16.00***	0.51
		Constant = 66.95***					
Physical Well-being	1	OS	0.139	0.139	156	25.15***	−0.37***
	2	Com	0.335	0.196	154	38.85***	0.47***
	3	OS × Com	0.379	0.044	153	31.08***	1.12***
		Constant = 41.55***					
Hong Kong Blue-Collar Group (N = 138):							
Job Satisfaction	1	OS	0.018	0.018	136	2.44***	−0.13
	2	Com	0.391	0.373	135	43.28***	0.61***
	3	OS × Com	0.396	0.005	134	29.31***	0.41
		Constant = 33.26**					
Mental Well-being	1	OS	0.000	0.000	125	0.30	−0.05
	2	Com	0.020	0.020	124	1.29	0.13
	3	OS × Com	0.026	0.006	123	1.07	0.39
		Constant = 49.51***					
Physical Well-being	1	OS	0.028	0.028	135	3.91*	−0.17*
	2	Com	0.028	0.000	134	1.94	−2.71E-04
	3	OS × Com	0.063	0.035	133	2.96*	1.03*
		Constant = 41.71***					
China Blue-Collar Group (N = 372):							
Job Satisfaction	1	OS	0.001	0.001	369	0.55	0.04
	2	Com	0.237	0.236	366	56.94***	0.49***
	3	OS × Com	0.239	0.002	365	38.23***	0.31
		Constant = 29.35**					
Mental Well-being	1	OS	0.028	0.028	348	9.84**	−0.17**
	2	Com	0.120	0.092	346	23.54***	0.30***
	3	OS × Com	0.121	0.001	345	15.78***	−0.23
		Constant = 32.46*					
Physical Well-being	1	OS	0.020	0.020	368	7.57**	−0.14**
	2	Com	0.052	0.032	365	9.98***	0.18***
	3	OS × Com	0.054	0.002	364	6.97***	0.37
		Constant = 29.29***					

Note: OS – occupational stressors; Com – organisational commitment;
*$P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

The results obtained in Table 2 show that, in the Hong Kong white-collar group, occupational stressors (OS) was a significant predictor of job satisfaction, mental well-being, and physical well-being; and organisational commitment (Com) contributed significantly to all regressions. Organisational commitment interacted with stressors to determine job satisfaction and physical well-being.

In the Hong Kong blue-collar group, occupational stressors (OS) was not a significant predictor of job satisfaction or mental well-being, but was a significant predictor of physical well-being. Organisational commitment contributed significantly to job satisfaction only, but not to other health effects. Further, organisational commitment only interacted with stressors to determine physical well-being.

This is the post-printed version of an article. The final published version is available at Applied Psychology: An International Review 51:4 (2002); doi: 10.1111/1464-0597.t01-1-00106
ISSN 0269-994X (Print) / 1464-0597 (Online)

In the China blue-collar group, occupational stressors (OS) was a significant predictor of mental and physical well-being, but it was not a significant predictor of job satisfaction. Organisational commitment contributed to all regressions. Concerning its moderating effects, organisational commitment did not interact with stressors to determine any health outcomes. Therefore the third hypothesis can only be partially supported.

DISCUSSION

Stressor–Well-being Relationships

The aim of examining the relationships between occupational stressors and well-being (job satisfaction, mental and physical well-being) that have been evidenced in Western societies using different national and occupational groups of Chinese subjects, is to verify findings that have been demonstrated in Western countries, so as to contribute to the generalisability of theories in psychology. Further, since research on work stress in the past has mostly used white-collar or professional people as subjects, the rationale of using Chinese blue-collar subjects is again to contribute to theories in organisational psychology.

The reliabilities of the scales, including the four subscales of the OSI-2, were acceptable (see Table 1). These results provide support to a previous study done in Hong Kong using the OSI-2 with samples of white-collar and professional employees (Siu & Cooper, 1998). This study then demonstrates that the OSI-2 (Williams & Cooper, 1996) is also a reliable instrument for Chinese blue-collar workers.

In the Hong Kong white-collar sample, workers who reported more sources of stress at work (a combination of the six stressors) had lower job satisfaction, worse mental and physical well-being. The stressor–well-being relationships which were verified by this sample have provided substantial support to the data obtained from Western countries (Bogg & Cooper, 1995; Robertson et al., 1990). The results obtained from this study also corroborated previous studies in Chinese societies—Hong Kong (Siu et al., 1997; Siu & Cooper, 1998), China (Yu et al., 1998), and Taiwan (Lu et al., 1997).

But among the blue-collar workers, the perception of more sources of stress only related to worse physical well-being for the Hong Kong blue-collar workers, and worse mental and physical well-being for the China blue-collar workers. Occupational stressors had no relationship with job satisfaction. One possible explanation may be that the blue-collar workers, in particular the China blue-collar workers, were overwhelmed by the tedious nature of their job, and accepted that life is as it is in the factory. This is supported by the long working hours reported by the workers in China, and the monotonous nature of the jobs in the factories in both Hong Kong and China.

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It can be concluded that the usual patterns of stressor–well-being relationship were partially verified in the Chinese blue-collar group. As the results obtained from the Hong Kong white-collar workers are similar to those obtained from Western societies, the differences between the white- and the blue-collar workers revealed from this study are perhaps due to white/blue-collar occupational division, not culture.

ROLE OF ORGANISATIONAL COMMITMENT

One of the aims of this paper was to consider the role of organisational commitment using Chinese white-collar subjects, and to see if similar results were obtained in blue-collar subjects, and to compare these with findings obtained in Western countries, so as to contribute to the generalisability of theories in organisational psychology.

The results showed that organisational commitment was related to most of the physical and psychological outcomes among workers (see Table 1). It was positively related to job satisfaction, mental and physical well-being in Hong Kong white-collar workers and China blue-collar workers. Further, organisational commitment was positively related to job satisfaction in the Hong Kong blue-collar group. These results corroborated previous studies (Mathieu & Zajac, 1990). Mathieu and Zajac (1990) argued that employees' level of commitment makes them more eligible to receive psychological rewards such as intrinsic job satisfaction. What this means is that an employee's level of commitment to an organisation may make him/her more eligible to receive both extrinsic (e.g. wages and benefits) and psychological (e.g. intrinsic job satisfaction and relationship with co-workers) rewards associated with membership (see Mathieu & Zajac, 1990, p. 171).

Since some of the findings of this study using Chinese white- and blue-collar subjects are consistent with previous studies using Western white-collar subjects and blue-collar Asian workers, the present study contributes to the generalisability of findings in this area.

Organisational commitment was also found to have moderating effects on the stressor–health relationships in this study, as indicated by the positive beta values in all significant interactions. Organisational commitment interacted with sources of stress at work to determine job satisfaction in the Hong Kong white-collar group; it even moderated the stressor–physical well-being relationship among Hong Kong white-collar and blue-collar workers (though only mildly) (see Table 2). These results corroborated previous studies in Western societies (Begley & Cazjka, 1993) and Chinese societies (Siu & Cooper, 1998). The explanations offered by previous researchers can help to attribute this indirect or moderating effect of commitment. For instance, Kobasa, Maddi,

and Kahn (1982) argued that commitment protects individuals from the negative effects of stress because it enables them to attach direction and meaning to their work. Mowday et al. (1982) also explained that organisational commitment can provide people with stability and a feeling of belonging.

The implications of these results are twofold: first, top management officials should pay attention to workers' affective organisational commitment, as this attitudinal trait could have both direct and indirect effects on workers' job satisfaction and well-being. Second, sources of stress at work exist in most organisations nowadays. Top management officials can make more effort to increase affective organisational commitment among employees, say through trust (e.g. Nyhan, 1999). This commitment may then interact with stressors to determine better job satisfaction and physical well-being, and in turn create better performance and productivity, and mitigate the turnover rate.

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