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Manager's occupational stress in state-owned and private enterprises in the People's Republic of China

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Abstract

Privatization that has taken place in the People's Republic of China has brought about improved profitability and effectiveness of enterprises. However, it is not known whether employees' occupational stressors and strains in private enterprises would differ from those in state-owned enterprises. This study aims to examine the major sources of manager's occupational stress in private and state-owned enterprises, and comparing the intensity of these stressors and strains. The relationships between stressors and strains were also investigated in both economic sectors. The questionnaires were completed by 234 managers in state-owned enterprises and 179 managers in private enterprises from eight cities of the PRC. The questionnaires were used to measure sources of stress, job satisfaction, and physical and psychological strain. The results showed that managers in private enterprises experienced higher levels of occupational stressors (mainly 'Organizational structure and climate' and 'Relationship with others') and psychological strains than those in state-owned enterprises. Moreover, 'Organizational structure and climate' was also found to be a major stressor when predicting both psychological and physical strain in both economic sectors.

Keywords

China, economic sectors, managers, occupational stress

Introduction

Occupational stress has been well-documented by researchers as it affects not only individuals in terms of physical and mental health but also organizations in terms of productivity and effectiveness. Previous studies have consistently found that occupational stress was negatively related to individual's job satisfaction, physical and psychological well-being in Western and Chinese societies (Siu, Lu and Cooper 1999; Siu, Spector, Cooper and Lu 2005; Spector, Cooper and Aguilar-Vafaie 2002; Widderszal-Bazyl, Cooper, Sparks and Spector 2000). With respect to the association between occupational stress and employees' work well-being, organizations with high workplace stress are meant to lose their productivity and effectiveness, considerably through absenteeism, turnover, healthcare cost, accidents and lowered job performance (Manning, Jackson and Fusilier 1996). For

instance, it has been estimated that about 60–70% of all sickness absences are associated with stress-related illness, and that 12% of the United States' GNP and 10% of the United Kingdom's GNP were lost due to stress-related absenteeism and turnover (Cartwright and Cooper 1997). Because of the substantial costs to individuals, organizations and societies at large, stress management is of utmost importance to organizations in order to make the best use of their most valuable resources – human resources. It is particularly pertinent to study occupational stress in the People's Republic of China (PRC) with more than 20% of the world's population. The PRC has been undergoing economic reforms and social changes over the past decades. As a result, the problem of occupational stress is becoming more serious.

As the world economy is becoming more market-oriented, enterprises in many places have been undergoing ownership reforms. These enterprises diversified their organizational structures and adopted different styles of human resources management in order to gain competitiveness (Ding, Lan and Warner 2001). Many studies have shown that human resources practices varied widely between state-owned and private enterprises (Ding, Goodall and Warner 2000). For instance, private enterprises in Finland differed from state-owned enterprises (SOEs) in the psychosocial work environment in which employees were more participative in decision-making, and more obligated towards others in the workplace. They also emphasized autonomy and supervisory control in human resources management (Väänänen et al. 2003). It is believed that differences between SOEs and private enterprises would create work dynamics that may affect employees' stress and well-being. Therefore, it is worthwhile to take into account the economic sector when examining occupational stress, especially in the PRC. The process of privatization in the PRC has taken place rapidly since it opened to the world. Therefore, PRC offers one of the most important contexts to investigate the impacts of privatization on individual employee's well-being. Our study aims to examine the major occupational stressors for managers in SOEs and private enterprises and compares the intensity of these stressors and strains.

Stressors, strains, and hypotheses

Study on occupational stress and well-being has been dominated by models linking work conditions (occupational stressors) to health-related outcomes (occupational strains). The general idea is that exposure to stressors leads to a variety of strains. Research has identified several work conditions that are classified as occupational stressors, such as work overload, interpersonal conflicts at workplace, organizational constraints, work-family conflict (Jex and Beehr 1991; Spector and Jex 1998; Williams and Cooper 1996). Strains as indicators of health and well-being can be divided into physical and psychological categories (Williams and Cooper 1996). Psychological strains include both emotional states (e.g., anger or anxiety) and attitudes such as job dissatisfaction. Physical strains can be physical symptoms (e.g., headache or stomach upset) and energy levels (e.g., feeling unaccountably tired or exhausted). To date, the cumulative occupational stress literature has shown

quite clearly that certain occupational stressors are reliably related to higher strains (Cartwright and Cooper 1997; Siu et al. 2005).

However, there have been very few studies attempting to examine occupational stress in different economic sectors. One of the very few was conducted by Widerszal-Bazyl et al. (2000) who investigated managerial stress in private and state organizations in Poland. They found that economic sector is a predictor of certain sources of stress connected with 'Insufficient organizational support' and 'Excessive workload' which were higher in SOEs. Their results also showed that managers in private enterprises reported higher levels of job satisfaction. Yet the two economic sectors did not differ significantly on physical and mental health. Another study also revealed a differentiation of sources of stress with respect to economic sectors in Poland (Nawojczyk 1998). The researcher reported that employees from private enterprises perceived more stress from 'Job insecurity' and 'Supervisors' attitudes towards employees'. On the other hand, employees from SOEs reported more stress from 'Organization of work' and 'Relationship with others'.

In the PRC, economic advances have brought about enterprise reforms, and a diversified ownership structure has emerged. While state ownerships for large enterprises in strategic sectors were retained, control to small and medium-size firms operating in highly competitive markets were retreated, and the privatization process has advanced (Lin 2001). Meanwhile, another important economic sector that contributed greatly to the Chinese economic development, namely township-village enterprises have also privatized rapidly. According to the survey conducted by Dong, Bowles and Ho (2002), 87% of the sampled township-village enterprises have been privatized. Recently, the number of private enterprises has increased substantially. According to The Second National Census of Basic Units (2003), the number of private enterprises in 2001 was doubled that in 1996, from 0.44 million to 1.32 million, comprising 43.7% of total enterprise numbers in the PRC. During the same period, the number of people working in private enterprises was trebled, from 8.02 millions to 31.7 millions, which had increased to 19.2% per cent of total employees in all types of enterprises.

It has been mentioned that private enterprises had an operating efficiency higher than that of SOEs (Zhang, Zhang and Zhao 2001) in the PRC. Furthermore, private enterprises had higher TFP (TFP stands for total factor productivity as a measure of efficiency in terms of the ratio of the real output over all the inputs used in production) (Jefferson, Rawski, Wang and Zheng 2000). However, a concern has been raised on whether human capital gains or loses during the maximization of economic effectiveness. Is employees' health sacrificed as a trade-off with increased economic effectiveness? Cunha and Copper (1998) suggested that privatization would have a negative impact on individual employees, in term of perceptions of occupational stress, job satisfaction, and mental and physical ill health. Following such logic, we hypothesize that:

Hypothesis 1a Managers in private enterprises would perceive higher levels of stressors than their counterparts in SOEs.

Hypothesis 1b Managers in private enterprises would perceive higher levels of physical strains and psychological strains, and lower levels of job satisfaction than their counterparts in SOEs.

There have been a few studies conducted in a Chinese context showing that occupational stressors were detrimental to employees' well-being, but all of them were sampled from specific occupations (e.g., Lu, Si und Cooper 2005; Siu et al. 2005) or organizations (Xie 2002). There is no study comparing occupational stress between different economic sectors. As concluded by Sparks and Cooper (1999), to understand fully the work-strain relationship, research should incorporate a range of variables which are specific to a particular workplace. Therefore, it is particularly worthwhile to study how employees working in different ownership organizations were exposed to different types of stressors in the PRC. Since no prior research has specifically compared the relationships between certain occupational stressors and manager's strains, job satisfaction in private enterprises and SOEs, we would hypothesize that:

Hypothesis 2 There would be differences in the relationships between stressors and managers' strains, job satisfaction across two economic sectors.

Method

Participants

Data were collected from enterprise managers in Beijing City, Hohhot City of Inner Mongolia Autonomous Region, Qinqdao City and Yanta City of Shangdong Province, Guangzhou City and Shenzhen City (also called Shenzhen Special Economic Zone) of Guangdong Province, Heifei City and Fuyang City of Anhui Province between October 2000 and June 2001. Beijing City, Inner Mongolia Autonomous Region, and Shangdong Province are in the northern part of the PRC. Guangdong Province is in the south, and Anhui Province is in the central area. The sample was drawn by a purposive sampling method. A total of 580 questionnaires were distributed by the first author to managers of state-owned and private enterprises in the region. In the end, 450 valid questionnaires were returned, making a response rate of 77.6%. Thirty seven returned questionnaires were from other enterprise sectors and were discarded, giving a final sample size of 413. There were 234 from SOEs (56.7%) and 179 from private enterprises (43.3%).

For the SOEs sample, there were 177 men (75.6%) and 56 women (23.9%) (1 unidentified), aged between 24 and 59 (mean = 39.37 SD = 7.69). The educational level of the sample varied from 3.8% graduate degree, 5.1% undergraduate degree, 33.3% vocational or technical college graduate, 51.3% senior high school graduate, to 3.8% junior high school or below, with 3.7% unidentified. The job levels of the sample varied from 18.8% top or senior managers, 61.5% middle managers, to 15.4% junior managers, with 4.3% unidentified. The average length of working experience was 11.25 years (SD = 7.68).

For the private enterprise sample, there were 106 men (59.2%) and 73 women (40.8%), aged between 20 and 50 (mean = 30.18 SD = 7.13). The educational level of the sample varied from 2.8% graduate degree, 33.2% undergraduate degree, 27.9% vocational or technical college graduate, 29.1% senior high school graduate, to 1.7% junior high school or below, with 5.3% unidentified. The job levels of

the sample included 8.9% top or senior managers, 31.3% middle managers, and 54.7% junior managers, with 5.0% unidentified. The average length of working experience was 5.94 years (SD = 5.38).

Measures

Occupational stressors

The shortened version of the Sources of stress scale of the Occupational Stress Indicator-2 (OSI-2) (Williams and Cooper 1996) was adapted. The reliability and validity of the Chinese version of this shortened version have been demonstrated in Chinese societies (Lu, Tseng and Cooper 1999; Siu et al. 1999). To avoid a lengthy questionnaire 12 items that measured six sources of stress were extracted for use from this scale, and each subscale was assessed with two items. The rationale for choosing these items is that they are more applicable to managers in the PRC. Example items are: 'Factors intrinsic to the job' (e.g., having to work very long hours), 'Managerial 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 development' (e.g., under promotion – working at a level below my level of ability), 'Organizational structure and climate' (e.g., morale and organizational climate), 'Work/home interface' (e.g., conflicting demands between my work and 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 not a source' (1) to 'very definitely a source' (6). The results from confirmatory factor analysis (CFA) show an accepted 6-factor model with relatively high goodness-of-fit indexes (The value of $\chi^2/df = 3.73$, GFI = 0.95, AGFI = 0.90, CFI = 0.92, NFI = 0.90, RMSEA = 0.07). A sum of these 12 items represents the level of total occupational stressors, with high scores indicating high level of perceived stressors. The score of each occupational stressor was also computed by adding two items. The Cronbach's alpha for this scale was 0.83, and all six subscales with each found above 0.76.

Strains

Job strains refer to a multitude of negative ways employees may respond to job stressors (e.g., poor job satisfaction, anger, frustration and physical symptoms (Jex 1998). Job dissatisfaction has recently been conceptualized as a job strain of stressors in Western and Chinese societies (Siu et al. 2005; Spector et al. 2004). Three scales were used to measure strains in the current study. They were: (a) Job satisfaction scale: measuring 'Satisfaction towards the job itself'. The modified version of the MSQ (Minnesota Satisfaction Questionnaire) (Weiss, Dawis, Lofquist and England 1966) was used to develop a 5-item job satisfaction measure, and was proven to be reliable and valid in Chinese societies (Lin, Fang and Zhang 2002). Each item was rated on a 6-point scale ranging from 'very unsatisfied' (1) to 'very satisfied' (6) (high score = high job satisfaction). Example item is 'The degree to which you are satisfied with your job'; (b) Physical strain scale: measuring 'Physical symptoms'. The modified version of the Well-being subscale of the OSI-2 with four-items was used, which was

proven to be reliable and valid in Chinese societies (Lu et al. 2005). Example item is 'Feeling unaccountably tired or exhausted'; (c) Psychological strain scale: measuring 'State of mind' and 'Resilience'. The modified Chinese version of the Well-being subscale of OSI-2 with 7-item was used, which had high reliability and validity (Lu et al. 2005). Each item of physical and psychological strain scales was rated on a 6-point scale, ranging from 'very untrue' (1) to 'very true' (6), with high scores denoting more physical and psychological strains. The Cronbach's alphas for the three scales were 0.78, 0.83, and 0.85 respectively.

Results

Descriptive statistics for the main variables in the study are presented in Table 1. One-way ANOVAs were conducted to compare corresponding means for two economic sector samples by showing F values. Six specific occupational stressors were also included. As can be seen in Table 1, the level of total stressors for managers was higher in private enterprises than those in SOEs (Mean_{private vs. SOEs} = 45.42 vs. 42.86), which was mainly contributed by the stressors of 'Organizational structure and climate' (Mean_{private vs. SOEs} = 8.05 vs. 7.57) and 'Relationship with others' (Mean_{private vs. SOEs} = 7.69 vs. 6.77). Therefore, Hypothesis 1a was fully supported.

Managers in private enterprise also reported higher level of psychological strain than those in SOEs (Mean_{private vs. SOEs} = 24.63 vs. 23.02). The differences in physical strain and job satisfaction were not significant between two economic sectors, although managers perceived slightly higher levels of physical strain and job satisfaction in private enterprises than those in SOEs. Hypothesis 1b was thus partially supported.

Table 2 shows the inter-correlations among the variables for the state-owned and private enterprise samples. Many relationships between occupational stressors and strains were in expected directions with more than half significant, except relationships between 'Factors intrinsic to the job,' 'Work/home interface,' and 'job satisfaction' in private enterprises. Specifically, six occupational stressors were positively related to psychological and physical strains, but negatively to job satisfaction. Contrary to our expectations, 'Factors intrinsic to the job' and 'Work/home interface' were positively related to job satisfaction in private enterprises.

A series of hierarchical multiple regression were conducted to investigate the predicting value of six occupational stressors on each of the three dependent variables, namely job satisfaction, physical strain and psychological strain, after controlling for demographic variables. In the first step, demographic variables including age, gender, tenure, educational level, and job level were entered. In the second step, all six occupational stressors were entered. Tables 3 and 4 present the results of regression analyses for private enterprises and SOEs respectively.

Table 1. Descriptive statistics and mean differences for state-owned and private enterprise samples.

Variable	State-owned enterprise's managers (N = 234)			Private enterprise's managers (N = 179)			F
	Mean	SD	Rang	Mean	SD	Rang	
Total occupational stressors	42.86	9.35	13-70	45.42	8.68	22-68	7.117***
Career development	7.52	2.18	2-12	7.58	2.11	2-12	.082
Organizational structure and climate	7.57	1.77	2-12	8.05	1.75	2-12	6.681**
Factors intrinsic to job	7.26	1.95	2-12	7.59	2.11	2-12	2.458
Managerial role	7.08	2.10	2-12	7.21	2.21	2-12	.237
Relationship with others	6.77	2.22	2-12	7.69	2.12	2-12	16.745***
Work/home interface	6.81	2.13	2-12	7.29	2.30	2-12	2.862
Job satisfaction	14.01	2.50	6-20	14.14	2.36	5-19	.259
Psychological strain	23.02	6.78	7-41	24.63	6.51	10-42	5.505*
Physical strain	13.76	4.59	4-24	13.88	4.50	4-32	.059

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

Table 2. Inter-correlations among the variables for state-owned and private enterprise samples.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Career development	—	0.44***	0.34***	0.37***	0.42***	0.37***	0.13	0.11	0.26***	0.23***	0.17	0.17*	0.13	0.11
2. Orga-structure & climate	0.53***	—	0.40***	0.37***	0.68***	0.46***	0.13	0.26***	0.25***	0.01	0.03	.00	0.06	0.10
3. Factors intrinsic to job	0.15*	0.22**	—	0.17*	0.47***	0.40***	0.03	0.23***	0.21**	0.10	0.05	0.12	0.08	0.08
4. Managerial role	0.29***	0.41***	0.12	—	0.33***	0.27***	0.17*	0.14*	0.12	0.03	0.07	0.07	0.04	0.12
5. Relationship with others	0.42***	0.60***	0.32***	0.36***	—	0.49***	0.08	0.17*	0.16*	0.06	0.01	0.03	0.01	0.11
6. Work/home interface	0.19*	0.24**	0.39***	0.10	0.22**	—	0.08	0.26***	0.29***	0.09	0.09	0.02	0.00	0.06
7. Job satisfaction	0.12	0.12	0.14*	0.10	0.08	0.12	—	0.17*	0.17*	0.18**	0.18**	0.12	0.07	0.03
8. Psychological strain	0.10	0.26***	0.20**	0.08	0.23**	0.10	0.16*	—	0.70***	0.00	0.18**	0.11	0.10	0.01
9. Physical strain	0.04	0.24**	0.14*	0.00	0.09	0.11	0.16*	0.62***	—	0.04	0.26***	0.07	0.06	0.10
10. Age	0.06	0.04	0.03	0.02	0.02	0.16	0.20*	0.09	0.03	—	0.06	0.61***	0.36***	0.42***
11. Gender	0.12	0.06	0.19*	0.05	0.11	0.26***	0.01	0.07	0.04	0.20*	—	0.10	0.15*	0.11
12. Tenure	0.10	0.08	0.06	0.04	0.09	0.04	0.21*	0.12	0.04	0.79***	0.15*	—	0.34***	0.11
13. Educational level	0.13	0.18*	0.32***	0.04	0.17*	0.08	0.03	0.22**	0.17*	0.28***	0.07	0.14	—	0.07
14. Job level	0.08	0.03	0.11	0.07	0.03	0.02	0.25***	0.10	0.00	0.52***	0.20**	0.50***	0.40***	—

Notes: Correlations for state-owned sector were shown above diagonal and those for private sector were shown below diagonal. orga-structure & climate: orga-structure and climate; Gender: Male = 1, Female = 2; Education level: junior high school = 1, senior high school = 2, vocational or technical college = 3, undergraduate = 4, graduate = 5; Job level: junior manager = 1, middle manager = 2, senior or top manager = 3; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3. Hierarchical regression analyses predicting occupational strains in private enterprises.

	Independent variable	Dependent variable		
		Job satisfaction	Psychological strain	Physical strain
Step 1	Age	0.06	0.05	-0.08
	Gender	0.07	-0.09	-0.04
	Educational level	-0.08	-0.19*	-0.17*
	Tenure	0.05	-0.12	0.08
	Job level	0.24**	-0.02	0.06
		$\Delta R^2 = 0.075$	$\Delta R^2 = 0.049$	$\Delta R^2 = 0.057$
Step 2		F change = 2.82	F change = 1.20	F change = 1.32
	Career development	-0.05	-0.09	-0.11
	Organizational structure and climate	-0.10	0.22*	0.36***
	Factors intrinsic to job	0.18*	0.11	0.07
	Managerial role	-0.08	-0.04	-0.09
	Relationship with others	-0.04	0.09	-0.08
	Work/home interface	-0.11	-0.01	0.05
		$\Delta R^2 = 0.066$	$\Delta R^2 = 0.069$	$\Delta R^2 = 0.080$
		F change = 2.15*	F change = 2.19*	F change = 2.52*

Notes: Gender: Male = 1, Female = 2; Education level: junior high school = 1, senior high school = 2, vocational or technical college = 3, undergraduate = 4, graduate = 5; Job level: junior manager = 1, middle manager = 2, senior or top manager = 3.

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

Table 4. Hierarchical regression analyses predicting occupational strains in state-owned enterprises.

	Independent variable	Dependent variable		
		Job satisfaction	Psychological strain	Physical strain
Step 1	Age	0.22*	0.02	0.01
	Gender	0.11	-0.18**	-0.25***
	Educational level	0.02	-0.16*	-0.12
	Tenure	-0.03	-0.14	-0.09
	Job level	-0.06	0.01	0.07
		$\Delta R^2 = 0.041$	$\Delta R^2 = 0.057$	$\Delta R^2 = 0.080$
Step 2		F change = 1.95	F change = 2.75	F change = 3.94**
	Career development	0.01	-0.09	0.14
	Organizational structure and climate	-0.07	0.18*	0.15*
	Factors intrinsic to job	0.00	0.14	0.07
	Managerial role	-0.15*	0.03	-0.04
	Relationship with others	-0.01	-0.09	-0.13
	Work/home interface	0.01	0.19**	0.22**
		$\Delta R^2 = 0.033$	$\Delta R^2 = 0.114$	$\Delta R^2 = 0.120$
		F change = 1.30	F change = 3.81***	F change = 5.54***

Notes: Gender: Male = 1, Female = 2; Education level: junior high school = 1, senior high school = 2, vocational or technical college = 3, undergraduate = 4, graduate = 5; Job level: junior manager = 1, middle manager = 2, senior or top manager = 3.

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

In the private sector, the percent variance explained by six occupational stressors on job satisfaction was 6.6 ($p < 0.05$), and 'Factors intrinsic to the job' was the only significant predictor ($\beta = 0.18$, $p < 0.05$). This was consistent with the result of correlation analysis, where contrary to our expectation, the β coefficient was positive. The unique variance explained by six occupational stressors on job satisfaction was non-significant in SOEs ($\Delta R^2 = 0.033$, $p > .05$), yet 'Managerial role' was a significant predictor ($\beta = -0.15$, $p < 0.05$).

For psychological strain, six occupational stressors significantly accounted for 6.9% and 11.4% unique variance in private and state-owned enterprises ($p < 0.05$ and $p < 0.001$ respectively). 'Organizational structure and climate' was a significant predictor in private enterprises ($\beta = 0.22$, $p < 0.05$). Meanwhile 'Organizational structure and climate' and 'Work/home interface' were the significant predictors in SOEs ($\beta = 0.18$, $p < 0.05$, and 0.19 , $p < 0.01$ respectively).

For physical strain, six occupational stressors significantly accounted for 8% and 12% unique variance after control for demographic variables in private and state-owned enterprises ($p < 0.05$ and $p < 0.001$ respectively). Similar to predicting psychological strain, 'Organizational structure and climate' was a significant predictor for physical strain in private enterprises ($\beta = 0.36$, $p < 0.001$), and 'Organizational structure and climate' and 'Work/home interface' were the significant predictors in SOEs ($\beta = 0.15$, $p < 0.05$, and 0.22 , $p < 0.01$ respectively). Although the stressors predicting strains in private and state-owned enterprises were different, there were also common ones, such as 'Organizational structure and climate'. Therefore, Hypothesis 2 was partially supported.

Discussions

The purpose of our study was to examine occupational stressors and strains in private and state-owned enterprises. Our results showed that managers in private enterprises experienced higher levels of occupational stressors (namely 'Organizational structure and climate' and 'Relationship with others') and psychological strain than those in SOEs. Moreover, 'Organizational structure and climate' was also a major stressor when predicting both psychological strain and physical strain in both economic sectors, and the relationships were more pronounced in private enterprises. This result corroborates Siu et al.'s (1999) findings in which 'Organizational structure and climate' was found to be a strong predictor of health and strain outcomes in Hong Kong. However, these results are in contrary to Widerszal-Bazyl et al.'s study (2000), which showed that 'Guidance and back up from supervisors and organizations' (most items from 'Organizational structure and climate' subscale in original OSI-2) and 'Excessive workload' (all items from 'Factors intrinsic to the job' subscale in original OSI-2) were more pronounced in state-owned enterprises than in private enterprises. This may be due to the social and economic changes as well as cultural differences. In this era of rapid economic advancement, the PRC's businesses, regardless of economic sectors, are undergoing organizational restructuring. Downsizing of organizations that resulted in dismissal of superfluous employees and pay cuts were frequently heard. Employees' morale was hampered and

working atmosphere became tense. Such restructuring or downsizing has also made workplace more uncertain. The effects of such kind of job insecurity on employees' work-related attitudes and well-being were particularly salient in the PRC context. Chinese employees have a low tolerance for uncertainty and a strong desire to maintain order and predictability in the workplace (Jackson and Bak 1998). As a result, the stressor from 'Organizational structure and climate' was more influential than other stressors, and hence managers in both state-owned and private enterprises reported high level of this stressor, and even higher for those managers in private enterprises. The weak formal relation with governments inhibited private enterprises from getting any kind of support. Facing fierce competition, these private enterprises only survive by frequent mergers and acquisition, which resulted in more drastic change in organizational structure. In addition, Confucian values that emphasize hierarchical structure and paternalistic leadership are still found in the PRC (Bond and Hofstede 1989), especially in private enterprises, which gave barriers to mutual communication and participative management in workplace. For the above possible reasons, managers in private enterprises perceived higher level of stress from 'Organizational structure and climate.'

To establish good *guanxi* or relationship with others is important in Chinese societies since Chinese traditional collectivistic value emphasized harmony. For this reason, 'Relationship with others' (also called interpersonal conflict) was also a remarkable occupational stressor in Chinese organizations (Siu et al. 2005). It was significantly higher in private enterprises because *guanxi* is more important for managers in private enterprises (Xin and Pearce 1996). The phenomenon of distinguishing between in-group and out-group is more serious in private enterprises in the PRC, which creates more interpersonal conflict and political behaviors. In addition, the performance based reward system had encouraged competitions between individuals, and managers in private enterprises may find it stressful to strike a balance between competing with others for personal achievement while maintaining group harmony. Moreover, the prevalence of short-term contract employment in private enterprises has given rise to high turnover rate (Ding et al. 2001). It can be quite difficult for employees to establish stable and long term relationship with other employees. Therefore, perceived stress from 'Relationship with others' was particularly significant in private enterprises in contrast to SOEs.

'Home/work interface' was a significant major stressor when predicting both psychological strain and physical strain in SOEs; yet it was a non-significant predictor in private enterprises. Recently, Xie (2002) also found that family-related demands, including too much housework and housing problems, significantly predicted the level of Chinese employees' (Mean age = 34.35 years) stress in SOEs. This may be mainly due to the different samples between two economic sectors. The recruited managers from SOEs were middle-aged (Mean = 39.37 years) while those in private enterprises were relatively younger (Mean = 30.18 years). As argued, middle-aged persons usually have to meet more work-family conflict (Marks 1998).

Contrary to expectations, 'Factors intrinsic to the job' was a significant predictor of job satisfaction in private enterprise, and its β coefficient was positive. Recently, some researches suggest that

stressors should be categorized into challenge-stressors and hindrance-stressors. Challenge-stressor related positively to desirable outcomes, such as job satisfaction and performance, while hindrance-stressors associated negatively with these same outcomes. Both types of stressors were harmful to well-being (Podsakoff, LePine and LePine 2007). In this study 'Factors intrinsic to the job' include working very long hours and keeping abreast of new techniques or challenges, which can be perceived as challenge-stressors. This finding could also be explained by current Chinese industrial relations. The employees in private enterprises are faced with the pressure of increased job demand (Cunha and Cooper 2002). The growth and success of Chinese private enterprises in part benefited from minimum wages cost, longer work-hours, and oppressive work conditions (Chang 2004). For these reasons, employees had to take more quantitative work or work overtime to get more salary because a performance-driven reward system was completely implemented in private enterprises. As a result, employees perceived higher levels of stress, but the benefit of salary may surpass the harmfulness of stressors to those employees. Further study is needed to investigate this relationship after controlling for employees' salary in the regression equations. Higher job demands would spare managers less time with their families, thus resulting in perceiving higher level of stress from 'Work/home interface' (Spector et al. 2004). This might help to explain why the stressor of 'Home/work interface' was also positively related to job satisfaction.

As Xie (2004) suggested, researchers should consider incorporating the pressures of social changes on individuals in Chinese job stress research design. By this, specific stressors may be identified that might be applicable to the same group of Chinese. The results of our study showed that managers in private enterprises had higher levels of the stressors from 'Organizational structure and climate' and 'Relationship with others' than those in SOEs. Taking the classification of task stressor-social stressors by Dormann and Zapf (2002), these two can be mainly categorized as a social-stressor (stress from negative social interactions with people in the workplace), and the other four stressors as a task-stressor (stress from task-related). Social stressors are currently becoming more serious, and significantly affected the well-being among employees in the PRC (Xie 2004). They are even more serious for employees in private enterprises because *guanxi*-driven is more popular in private enterprises (Xin and Pearce 1996). Managers in both economic sectors experienced task stressors when finishing their jobs, although managers in private enterprises perceived slightly higher levels than those in SOEs (Table 1). This may be one of main reasons why these task stressors were not significantly different between the two economic sectors. Our study also showed that managers were suffering from different occupational stressors in the two economic sectors, although they shared one common stressor – 'Organizational structure and climate'.

Our study contributes to the stress literature by comparing manager's occupational stressors and strains in private and state-owned enterprises. Our results suggest that type of enterprises should be considered as an important variable in stress research. Moreover, the present study also enriches the literature by using a sample drawn from a transitional and developing country. Recently, the World Health Organization has called for increasing awareness of stress at workplace in developing

countries (Houtman, TNO Work & Employment, and Cediollo 2007) Those countries have been largely ignored by researchers, yet face serious problems resulting from stress. We believe our present study has partially filled this gap of knowledge.

As suggested by Sparks and Cooper (1999), using a more job-specific model would be more effective for intervention in the workplace to improve worker well-being. With regard to our findings, several practical implications are suggested. First, private enterprises should show more concern to employees' work related well-being particularly while emphasizing economic efficiencies. Some stress management programs could be implemented to alleviate strains in the workplace, and make employees more productive and healthy. Second, in order to promote better psychological and physical health, top managers in both economic sectors should consider how to lower employees' stress resulting from 'organizational structure and climate' by creating a more supportive, stable and secure working atmosphere, since this stressor significantly predicted all employee's psychological and physical strains in both economic sectors. Third, attention should be focused on different occupational stressors when human resource managers conduct stress intervention or training programs in two economic sectors.

Limitations

As our data were self-reported, there may possibly be percept-percept bias. Objective measures of stressors and health outcomes, like physiological measures or recorded sick days, should be used in future studies. In addition, the cross-sectional nature of our study could not allow us to confirm any causal relations between stressors and strain. Longitudinal studies would be more useful. It should be kept in mind that our study was conducted among managers, so our results may not be generalized to the wider populations of workforce in the PRC.

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