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# PERSONAL CONTROL AND ORGANIZATIONAL COPING STRATEGIES OF JOB STRESS: EMPIRICAL RESULTS FROM CHINA

by

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# Personal Control and Organizational Coping Strategies of Job Stress: Empirical Results from China[1]

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## Introduction

In the process of China's economic system reform and modern enterprise construction, job stress is becoming a more and more important research issue in organizational psychology. The establishment of personal responsibility system, uncertainty of organizational change, risk of market economy and challenges from technology development create a highly stressful situation for both managers and workers in enterprises in China.

Studies on job stress take two major approaches (Jonge, Breukelen, Landeweerd, & Nijhuis, 1999): 1. The situation-centered approach, focusing primarily on explanatory factors or events in work situation, such as workload, industrial relations and job characteristics, and their effects on occupational health. (Haynes, LaCroix, & Lippin, 1987, Kahn & Byosiere, 1992, Marshall & Cooper, 1979); 2. The cognitive orientation approach, emphasizing the intervening effect of human cognition among the task demands and work situation and job stress (Lazarus, 1993).

Much cognitive oriented research has indicated that perceived personal control is an important predictor of psychological and physical functioning, as well as organizational or personal outcomes (Sauter, Hurrell & Cooper, 1989). For instance, giving people the opportunity of stimulus modification, regulated administration of stimulus, personal involvement in the decision making, or even cognitive reappraisal of threat may reduce stress (Averill, 1973). A more systematic theory of control is Karasek's Job Demands-Control (JD-C) model (Karasek, 1979). In his model, Karasek proposed that psychological strains are consequences of joint effects of two basic job characteristics: psychological job demands and job decision latitude, where psychological job demands are psychological stressors present in work environment, and job decision latitude or job control is the working individual's potential control over his tasks and his conduct.

The purpose of the present study is first to examine the relationship between organizational strategies and job stress, taking the assumption that personal control will mediate the underlying organizational strategies–job stress connection, and then to develop stress copings by recombining management with regard to their impact on personal control. Further, the role of educational level and types of jobs on job stress will also be examined.



## Methods

Self-administered questionnaire survey method was employed to collect data.

### Sample

The sample for this study consists of 223 employees from 11 manufacturing companies in Zhejiang Province and Shichuan Province, Mainland China. 10 companies are state owned, and one Sino-foreign joint venture. 147 participants are workers and 76 are managers. About 64% of them are females (N = 143), and 36% are males (N = 80).

### Measures

The questionnaire we used consists of the following four parts:

*Job characteristics.* Based on the result of item analysis, 15 items are selected from Hackman and Oldham's Job Characteristics Scale (1975). The alpha coefficient of reliability is 0.66.

*Personal control.* Following Averill's construct (Averill, 1973), 10 items are developed to measure three facets of personal control: behavioral control (2 items), cognitive control (5 items) and decisional control (3 items). Their alpha coefficients are .61, .60 and .78 respectively.

*Job stress.* 11 items are developed with reference to House and Rizzo's Stress Scale (1972) representing three components as revealed by factor analysis, and termed as emotional (3 items), psychological (4 items) and physiological symptoms (4 items) of job stress.

*Management variables.* As a result of interviews and discussions with senior managers, management is measured by 13 items grouped into four subscales: goal clarity (5 items), supportive leadership (3 items), organizational participation (3 items) and democratic leadership (2 items).

Respondents were asked to indicate the extent they agree with the description of each item on a five-point Likert-type scale ranging from 1 ( strongly disagree) to 5 ( strongly agree).

Data analysis is conducted using the SPSS 7.5 for windows and LISREL 7.

## Results

Relationship between Job Characteristics, Personal Control and Job Stress

Following Hackman's job redesign theory (Hackman and Oldham, 1976), job characteristics is assessed in five dimensions, variety of technology, completeness of task, significance of task, autonomy and feedback. Motivation Potential Score (MPS) is calculated as an overall index of job characteristics. Intercorrelations among job characteristics, personal control and job stress are analyzed and shown in Table 1.

Table 1. Correlations among job characteristics, personal control and job stress

| | Job Characteristics | Personal Control | Job Stress |
|---|---|---|---|
| Job Characteristics | -- | | |
| Personal Control | .568** | -- | |
| Job Stress | -.190 | -.362** | -- |

** P < 0.01

When studying the intercorrelations in Table 1, it is clear that job characteristics relates only slightly with job stress but strongly correlates with the variable of personal control, while the later has significant relationship with job stress. This correlation pattern tends to suggest personal control as a mediator between job characteristics and job stress, and therefore is further studied with path analysis. Figure 1 shows path coefficients between these three variables.

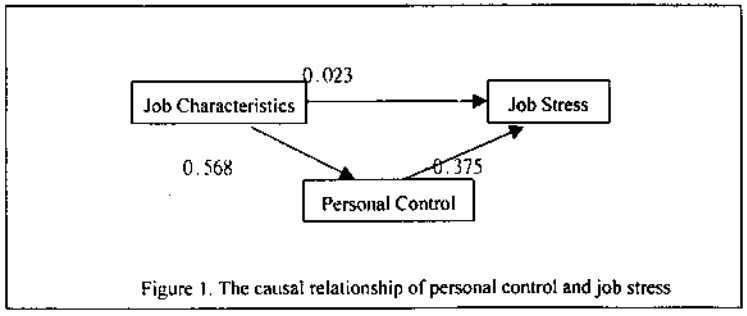


Figure 1. The causal relationship of personal control and job stress



It can be found in Figure 1 that the direct effect of job characteristics on job stress is very limited, as evidenced by the path coefficient of 0.023 from job characteristics to job stress, while the indirect effect is relatively large, evidenced by the path coefficient of 0.568 from job characteristics to personal control, and -0.375 from personal control to job stress. It is therefore concluded that job redesign, as a coping strategy of stress, can increase personal control, while the increase of personal control results in less stress.

Job stress and educational levels and the types of jobs

Educational background is an important measure of competence, and types of tasks vary in their uncertainty, both variables are thus assumed to correlate with personal control, and therefore would related with job stress. This assumption is tested with analysis of variance (ANOVA).

Four Educational levels classified are junior middle school, high school, college and university. Six types of job are classified as production, administration, personnel, marketing, engineering and accounting. Tables 2 and 3 give the means of three facets of stress scores for each educational levels and type of tasks.

Table 2 Means of stress score and ANOVA for each educational levels

| Education | Psy. Sympt. | Phy. sympt. | Emot. Sympt. | Total score |
|---|---|---|---|---|
| Junior middle school | 3.63 | 3.75 | 3.13 | 10.51 |
| High school | 2.89 | 2.73 | 2.86 | 8.48 |
| College | 2.76 | 2.83 | 2.57 | 8.16 |
| University | 2.87 | 2.77 | 2.58 | 8.22 |
| ANOVA F | 2.65* | 4.73** | 1.38 | 3.83* |

Note. Psy. Sympt. - psychological symptoms Phy. sympt. - physical symptoms
Emot. Sympt. - emotional symptoms * p< 0.05, ** p<0.01

| Table 3 means of stress score and ANOVA for types of tasks | | | | |
|---|---|---|---|---|
| Section | Psy. Sympt. | Phy. Sympt. | Emot. Sympt. | Total score |
| Production | 3.71 | 3.79 | 3.33 | 10.83 |
| Administration | 3.06 | 3.02 | 2.44 | 8.52 |
| Personnel | 3.25 | 2.90 | 2.47 | 8.62 |
| Marketing | 3.06 | 2.69 | 2.58 | 8.33 |
| Engineering | 2.65 | 2.77 | 3.08 | 8.50 |
| Accounting | 2.13 | 2.44 | 2.29 | 6.86 |
| ANOVA F | 4.18** | 2.58* | 2.09 | 3.28* |

Note. Psy. Sympt. - psychological symptoms Phy. sympt. - physical symptoms
Emot. Sympt. - emotional symptoms * p< 0.05, ** p< 0.01

In Table 2, scores of psychological symptom, physiological symptom and total score show significant differences among educational levels (for psychological symptom F=2.65, p<.05; for physiological symptom F=4.73, p<.01; and for total score F=3.83, p<.05). The main difference happens between employees with education of junior middle school and the other levels of education.

In Table 3, scores of psychological symptom, physiological symptom and total score show again significant difference among types of job (for psychological symptom F=4.18, p<.01; for physiological symptom F=2.58, p<.05; and for total score F=3.28, p<.05). Six types of job can be grouped into three according to their stress scores. The most stressful job is production with the total stress score of 10.83, while the least is accounting with 6.86. Stress scores of the other types of job are varying around 8.5.

Our ANOVA results in Table 2 and 3 show no significant differences among educational levels as well as among types of jobs, which might lead to a conclusion that the emotional symptom of job stress is not a sensitive index to the variations of educational level and type of job. But we would like to point out that emotional disturbance is usually caused by salient events in daily life or work situation, and though deep, they last shortly. Educational level and type of job are definitely not belonging to these situational events.



Organizational Coping Strategies of Job Stress

Based on our interviews and group discussions with managers in factories, four measures of management and two measures of job characteristics are identified as coping components of job stress. They are organizational participation, goal clarity, democratic leadership, supportive leadership, job feedback and job significance. Intercorrelations of these management variables and facets of personal control are calculated and listed in Table 4.

| Table 4. Intercorrelations of management variables and personal control | | | |
|---|---|---|---|
| Management variables | Behavioral control | Cognitive control | Decision control |
| Organizational Participation | .04 | .12 | .21* |
| Supportive Leadership | .26** | .11 | .05 |
| Democratic Leadership | .42 | .26** | .04 |
| Job Feedback | .23** | .38** | .17 |
| Goal Clarity | .47** | .68** | .35** |
| Job Significance | .34** | .57** | .36** |

* p< 0.05, ** P< 0.01

All variables of management in Table 4 have significant correlations with facets of personal control. These management variables are then further grouped into three coping strategies with reference to management practices in enterprises in China. Variables of democratic leadership, job feedback, goal clarity and job significance are the most important features in Lock's goal setting model. They compose the first coping strategy of stress. Organizational participation prescribes a formal procedure of management while supportive leadership makes a requirement of supervisor's behaviors, these two variables forms the cores of the other two strategies. Accordingly, a LISREL ( Linear Structure Relation) model describing the structural relationship between these management variables and job stress is tentatively specified and tested by the program of LISREL 7 ( Joreskog and Sorbom, 1989).

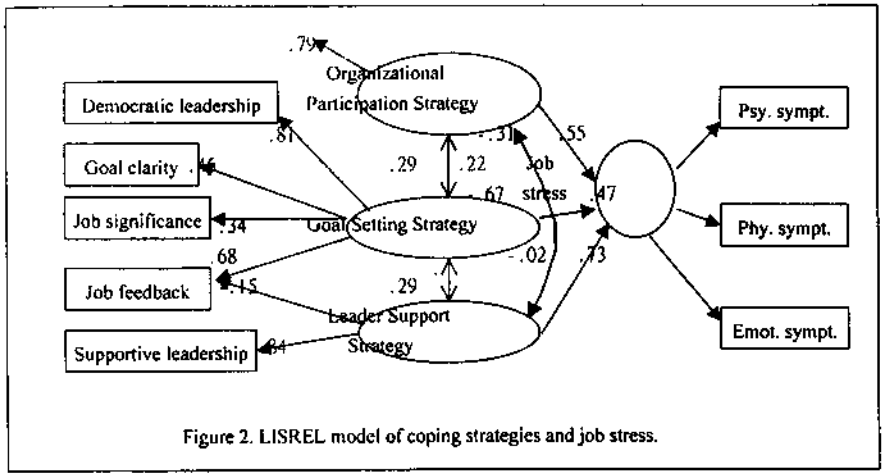


Figure 2. LISREL model of coping strategies and job stress.

Figure 2 shows the completely standardized outcome of LISREL program estimation. The model after some modifications fits data well evidenced by $\chi^2$ of 30.11, Goodness of Fit Index (GFI) of 0.932, and Root Mean Square Residual (RMSR) of 0.017.

Three organizational coping strategies for job stress are identified on the base of the relationship in Figure 2. They are:

1) Leader support strategy, characterized by a supportive leadership style, can help workers resume their self-confidence in a stressful environment.

2) Organizational participation strategy, by delegating to them more power in making decisions, behavioral control of workers over stressful tasks is increased.

3) Goal setting strategy. This strategy can enhance workers' self-determination by providing them with well-specified and collectively decided goals, suggestive task feedback, high significance of task and democratic leadership.

## Discussion

The present study focuses on the mediation of personal control between organizational variables and job stress. There is some support for job redesign as a coping strategy of stress. Job redesign was first proposed by Hackman to improve motivation and job



control.

Though much research focuses on the implication of job-specific training for improving self-efficacy, self confidence and perception of competence, this study shows that there might be a minimum requirement for education to maintaining a good psychological well-being. This minimum requirement may relates to the majority educational levels, and in our sample it is the high school level. In Mainland China, most workers have received high school or college training, about 52% as in our research sample, and a few (about 33% of participants in this study) have the background of university education. Therefore, workers with junior school education (about 15% in our sample) are challenged by the development of technology. Most of them also work in the production section, and have very low job security.

Stress scores seem not take the same order as risk and uncertainty involved in the types of work. Production section has the highest score of stress, accounting the lowest, and the rest, including marketing with the expectation of most uncertainty involved list between. This order of stress may reflect a joint effect of complexity and uncertainty of the job on the one side, and self-determination of working activity on the other. Working in accounting section in Chinese enterprise is like rule following and therefore less complex. But workers in the production section tend to be more other-determined, they have to accommodate all changes to their plan required by sections of marketing, engineering and administration, and of course the physical working condition is also the worst.

The highest path coefficient (-.67) from goal setting strategy to job stress in our LISREL model tends to suggest the goal setting strategy as the most effective one in reducing job stress. This may be attributed to the wide adaptation of MBO together with personal responsibility system in Chinese enterprises, which is, based on our follow up interview, one of main stressors. A suggestion is therefore made for managers to be more democratic in setting goals, to provide task related feedback, and to increase job significance and clarity.

The leader support strategy in our LISREL model seems to have a very weak impact on

stress as indicated by the path coefficient of -.02. This seems inconsistent with results from studies on social support. Though most research on social support focuses on family and friend, a typology of social support proposed by House and Well (1978) classifies social support sources as supervisor, management, coworkers, and family, and social support types as listening, showing concern, giving aid, giving tangible assistance, giving advice, and giving suggestions. Deeter-Schmelz and Ramsey (1997) compared various social support based on the House's model, and indicated that support from immediate supervisor and top management are seen as having a greater impact on stress than family or coworkers. We attribute this inconsistency to significant intercorrelations between three coping strategies, and some of effect of leader support on stress is shared by the other two. We would like to leave this for further examinations.



## Reference


Averill, R. (1973) Personal Control over Stimuli and Its Relationship to Stress, *Psychological Bulletin*, 80, No.4, 286-301.

Cooper, C. L. and Marshall, J. (1976) Occupational Stress: A Review of the Literature Relating to Coronary Heart Disease and Mental Ill Health. *Journal of Occupational Psychology*, 49, 11-28.

Deeter-Schmelz, D. R. and Ramsey, R. P. (1997) Considering sources and types of social support: A psychometric evaluation of the House and Wells' instrument, *The Journal of Personal Selling and Sales Management*, 17, 49-61.

Hackman, J. R. and Oldham, G. R. (1975) Development of the Job Diagnostic Survey. *Journal of Applied Psychology*, 60, 159-170.

Hackman, J. R. and Oldham, G. R. (1976) Motivation through the Design of Work: Test of a Theory. *Organizational Behavior and Human Performance*, 16, 250-279.

Haynes, S. G., LaCroix, A. Z. and Lippin, T. (1987) The Effect of High Job Demands and Low Control on the Health of Employed Women. In Quick, J. C., Bhagat, R., Dalton, J. and Quick, J. D. (Eds.) *Work Stress: Health Care Issues in the Workplace*, Praeger, New York, 93-101.

House, R. J. and Rizzo, J. R. (1972) Role Conflict and Ambiguity as Critical Variables in a Model of Organizational Behavior. *Organizational Behavior and Human Performance*, 7, 467-505.

House, J. S. and Wells, J. A. (1978) Occupational Stress, Social Support, and Health, in McLeon, Black and Colligan, (eds.), Reducing Occupational Stress: Proceedings of a Conference, Washington, DC: National Institute for Occupational Safety and Health, 8-29.

Jonge, J., Breukelen, G., Landeweerd, J. and Nijhuis, F. (1999) Comparing Group and Individual Level Assessments of Job Characteristics in Testing the Job Demand-Control Model: A Multilevel Approach. *Human Relations*, 52, 95-122.

Joreskog, K. G. and Sorbom, D. (1989) LISREL 7: User's Reference Guide, Scientific Software, Mooresville, IN.

Kahn, R. L. and Byosiere, P., (1992) Stress in Organizations, In Dunette, M. D. and Hough, L. M. (Eds.), *Handbook of Industrial and Organizational Psychology* (Vol. 3), Palo Alto, CA: Consulting Psychologists Press, 571-650.

Karasek, R. A. (1979) Job Demands, Job Decision Latitude, and Mental Strain:

Implications for Job Redesign, *Administrative Science Quarterly*, 24, 285-306.

Lazarus, R. S. (1993) From Psychological Stress to the Emotions: A History of Changing Outlooks, *Annual Review of Psychology*, 44: 1-21.

Sauter, S. L., Hurrell, J. J. and Cooper, C. L. (1989) ***Job Control and Worker Health***, Wiley, Chichester, UK

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