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Lingnan College

Asia-Pacific Institute of Ageing Studies

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**A LONGITUDINAL STUDY ON MANAGERIAL
STRESS IN HONG KONG : AGE DIFFERENCES
IN COPING STRATEGIES AND LOCUS OF CONTROL**

by

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Abstract

The present study is a 15-month project which collected data from Hong Kong managers at three points to examine the role of age, coping strategies, and locus of control in managerial stress in Hong Kong. A total of 634 managers was drawn by random sampling and purposive sampling method. The Occupational Stress Indicator-version 2 (OSI-2) was used as the instrument to collect data by self-administered survey method. The results showed that age was negatively related to sources of stress, absenteeism and quitting intention; and positively related to job satisfaction, mental well-being, and physical well-being. The results also showed that older managers tended to employ more control coping, and older managers had greater job satisfaction and better well-being. In locus of control, age was found to be negatively related to work locus of control (external). It has been demonstrated that managers who were externals (people who hold expectancies that outside forces or luck controls reinforcements) were those who had lower job satisfaction, worse mental or physical well-being, and higher quitting intention. Further, managers who were externals employed fewer control coping strategies. These results suggest that age differences in job satisfaction and well-being can possibly be attributed to the differences in coping, and which in turn might be due to differences in controllability.

A longitudinal study on managerial stress in Hong Kong: Age differences in coping strategies and locus of control¹

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Introduction

This study is part of the Collaborative International Study of Managerial Stress (CISMS). CISMS is a multinational study involving efforts by a group of international researchers. It was founded in 1995 by Cary L. Cooper and Kate Sparks, both at University of Manchester Institute of Science and Technology and Paul E. Spector at the University of South Florida. The goal of the project is to bring together researchers from around the world who collect data with the same instrument in their own countries. Data can then be combined to explore country differences. The present study is a 15-month project which collected data from Hong Kong managers at three points to investigate the relationship between job stressors, job strains, coping strategies, and locus of control; age differences in these variables were also examined.

Sources of managerial stress have been well-documented since the late 1970s. Cooper and Marshall (1976, 1978) suggested five categories of work stressors: those intrinsic to the job, and those resulting from one's role in the organization, career development, relationships with others, and organizational structure and climate. Ivancevich and Matteson (1980) identified four categories of stressors: physical environment, individual level (a mixture of role and career development variables), group level (primarily relationship-based), and organizational level (a mixture of climate, structure, job design and task characteristics). Schuler (1982) also identified seven categories of work stressors in organizations: job qualities, relationships, organizational structure, physical qualities, career development, change and role in the organization. Quick and Quick (1984) proposed four categories of stressors: task demands, role demands, physical demands, and interpersonal demands. Burke (1988) provided a summary of findings for six categories of stressors: physical environment, role stressors, organizational structure and job characteristics, relationships with others, career development and work-family conflict. Recently, Cooper, Sloan, and Williams (1988) have identified six sources of stress at work: intrinsic to the job, management role, relationship with others, career and achievement, organizational structure and climate, home/work interface.

Recent research revealed that managerial stressors are related to ill health, job dissatisfaction, high absenteeism and turnover (Cooper & Payne, 1978; Cooper, 1981; Davidson & Cooper, 1983, 1992; Quick et al., 1990). There has been an increasing amount of research on stress moderators and stress mediators in the work place since the early 1980s. Lazarus and coworkers (Lazarus & Launier, 1978; Lazarus & Folkman, 1984) have tried to distinguish the concepts of 'moderators' and 'mediators', and emphasized that moderators should not be confused with mediators. Moderators are antecedent conditions such as gender, socioeconomic status, or personality traits that interact with other conditions in producing an outcome.

¹ The data collection has benefited from financial support from the Research Committee, Lingnan College and the Hong Kong Occupational Safety and Health Council

Lazarus and co-workers have made significant contribution to research in occupational stress by eliciting the importance of coping as a mediator. For them, a mediator is generated in the transaction, it changes the relationship between the antecedent and the outcome variables. They emphasized that stress is in part the result of lack of fit between individuals and their environment. Therefore, adaptive training techniques can help to reduce strain caused by stress. Effective coping can improve work satisfaction, reduce tension, lower turnover and absenteeism, and even to positive outcomes for both individuals and employers. The most important role of coping has been well documented in work stress studies (Bhagat & Beehr, 1985; Cohen, 1987). In a review provided by Semmer (1996), people who have the tendency to cope by dealing actively with the problem (e.g. problem-focused coping, control coping) tend to have better mental, and sometimes physical, health (e.g. Aldwin & Revenson, 1987; McCrae & Costa, 1986; Scheier & Carver, 1992).

There are age differences in the stress and coping process. Older employees were considered to be problematic in terms of productivity, flexibility, innovation, stress, and health (e.g. Belsky, 1990). On the other hand, it had been found that older people reported fewer hassles than younger adults (e.g. Aldwin, 1991). Aldwin et al.(1996) have provided some developmental reasons why older adults appraise problems as less stressful: older people, through their greater range of experience, may have developed more coping resources and thus appraise problems as less stressful. It seems that older people use fewer escapist, hostile, or avoidant coping than younger adults (Aldwin, & Revenson, 1985; McCrae, 1982).

In studying the relationship between age and job satisfaction, it appears that older employees are more satisfied with their work than younger ones (Warr, 1992; White & Spector, 1987). Loitegui (1990) suggested that the indicators of job satisfaction vary with the age of the workers. This argument was supported by Forteza and Prieto (1994). They proposed that generational effects as well as the professional level moderate the age-satisfaction relationships. For instance, 'relations with supervisor' and 'recognition' are important for satisfaction of young people, whereas 'the type of work' and 'income' are important factors for satisfaction of older workers.

In some studies using Chinese subjects in Taiwan, it has been found that older employees with longer working experience tend to report more job satisfaction and job commitment (Chen & Huang, 1982; Huang, 1986; Hsu, 1977; Li & Lu, 1982; Su & Huang, 1992).

During the 1980s, locus of control (Spector, 1982, 1986) was found to be related to job stressors and job strains. As Spector (1994) defined, locus of control "is a personality variable that concerns people's generalized expectancies that they can or cannot control reinforcements in their lives. People who hold expectancies that they control reinforcements are considered to be internals, and people who hold expectancies that outside forces or luck controls reinforcements are considered to be externals" (p. 2). In a meta-analysis, Spector (1986) reported that there are correlations between locus of control and job strains (job satisfaction, symptoms and emotional distress).

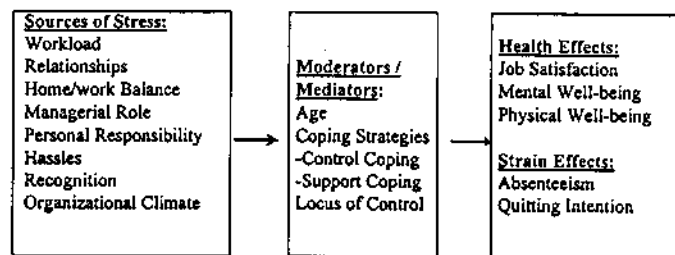
The construct of locus of control, like coping, is also important to studies of ageing. The concept of control relating to stress in later life was summarised in details by Rodin (1986). It has been found that perceptions of control in general lead to greater endurance of aversive stimuli (Kanfer & Seider, 1973); greater feelings of control lead to greater satisfaction (Liem, 1975) and performance (Glass & Singer, 1972). In a review conducted by Lachman (1986), it has been found from early studies that elderly tended to be more external than younger adults, but later studies have shown mixed results. Yet, differences in coping strategies between older and younger adults are primarily a function of differences in controllability (Blanchard-Fields & Robinson, 1987; Folkman et al., 1987). For instance, Blanchard-Fields et al. (1987) found no age differences in locus of control, but they found that the elderly were less likely to attribute controllability for the cause or outcome stressful events to themselves in the domains of interpersonal relationships and achievement.

There has previously been little research done on managerial stress in Hong Kong. One of the very few was conducted by Sin and Cheng (1995). They identified six sources of stress among 1000 business executives in Hong Kong: job-assigned stressor, responsibility stressor, work/organizational climate stressor, career stressor, job-value conflict stressor and role-ambiguity stressor. Each of them was related to respondents' self-reports of physical health, depending on their gender, age and experience in managerial position.

The Present Study

The present study examines the role of age, coping strategies, and locus of control in managerial stress in Hong Kong. The study also tries to investigate differences in perceived stressors, job strains, coping strategies and locus of control between older and younger managers. One of the limitations of work stress research is its reliance on cross-sectional data (Frese & Zapf, 1988). To address this limitation, the present study employs a trend study of a longitudinal approach. Hong Kong has been reverted to China since 1 July 1997, and Hong Kong has experienced the Asian financial crisis since October 1997. The data were collected in March/May 1997, October/November 1997, and April/May 1998. The first two rounds of data can be used to compare the effect of the Handover in July 1997; and the second and third rounds of data can be used to study the effect of the outburst of the Asian financial crisis. The model of the study is depicted in Figure 1.

Figure 1. Theoretical Framework for the study.



Based on previous research literature, a number of hypotheses can be generated from this model. They are:

1. Managers who perceive more sources of stress will have worse health effects (worse mental well-being and physical well-being, less job satisfaction), and more strain effects (more absenteeism and quitting intention).
2. Age is negatively related to sources of stress; positively related to job satisfaction, mental well-being; and negatively related to physical well-being, absenteeism, and quitting intention.
3. Managers who employ more coping strategies will have better mental well-being and physical well-being, greater job satisfaction, lower absenteeism, and less quitting intention.
4. Externals tend to have worse mental well-being and physical well-being, less job satisfaction, higher absenteeism, and more quitting intention.
5. Age is positively related to control coping, and negatively related to support coping.
6. Age is negatively related to external locus of control.
7. External locus of control is negatively related to control coping.
8. Older managers will perceive less sources of stress, have better mental well-being, greater job satisfaction, worse physical well-being, lower absenteeism, less quitting intention, employ more control coping, and are more likely to be externals than younger managers.
9. There are differences in perceived stressors, job strains, coping strategies, and locus of control before and after the Handover in 1997.
10. There are differences in perceived stressors, job strains, coping strategies, and locus of control before and after the Asian financial crisis.

Methodology

Self-administered questionnaire survey method was used to collect the data. There is much criticism on self-report measures in work stress research (Frese & Zapf, 1988; House et al., 1986; Spector et al., 1988); and in organizational conditions and job characteristics (Spector & Jex, 1991; Taber & Taylor, 1990). Even though Spector (1987, 1992) have demonstrated that method variance was not an artifact in self-reported affect and perceptions at work, the present study tries to include some objective measures.

Sample

Although the target population for the CISMS is a broad cross-section of managers, the present study has tried to recruit random samples of managers in Hong Kong. However, due to the fact that the data collection in Round 1 and Round 3 were benefited from research grants, it was financially able to draw random samples by mail survey in these two occasions. Yet, due to limited manpower and resources in Round 2, only a broad sample of managers were recruited in this occasion.

Round 1. The data collection in the first round was conducted from March to May 1997 by random sampling method and purposive sampling method. A total of 1,021 questionnaires were sent to three groups of industrial and commercial managers

which were randomly selected from the *Members' Business Directory of The Chinese General Chamber of Commerce 1997*. These three groups were 'Garment and Footwear', 'Finance, Insurance and Real Estate', and 'Industrial, Commercial and Trading Services'. Each of the managers was requested to complete and return the questionnaire within three weeks. Follow-up telephone calls were conducted to ensure a higher return rate. The results showed that 229 letters returned; out of which, 107 were unattended ones returned to sender (due to change of address or closing down of the business), 29 were incomplete ones, and there were only 93 completed ones. This made up a response rate of 10.2%.

The other sample of managers participating in the study was recruited from part-time students who were taking courses at Lingnan College, Hong Kong University, and The Hong Kong Management Authority; and the rest of the sample was accessed from five firms by convenient sampling method. 187 managers were successfully recruited, and therefore the total number of respondents in Round 1 was 280.

Round 2. A broad cross-section of managers was recruited from the same sections of the three firms which participated in Round 1. The rest of the sample was recruited by snowball method undertaken by the third year students taking the course 'People in Organizations' at Lingnan College. A total number of 192 completed questionnaires were collected in Round 2.

Round 3. A broad cross-section of managers were recruited from part-time MBA students at The Hong Kong University of Science and Technology, Hong Kong Polytechnic University, and Open University. Three hundred and eighty-one questionnaires with self-addressed and stamped envelopes were delivered and distributed, and 63 completed questionnaires returned, making up a response rate of 16.5%.

A random sample of managers was selected from the *Members' Business Directory of The Chinese General Chamber of Commerce 1997* by simple random sampling method. The three groups that were used in Round 1 were excluded (they were 'Garment and Footwear', 'Finance, Insurance and Real Estate', and 'Industrial, Commercial and Trading Services'). 1500 questionnaires were sent to 23 business categories. The results showed that 247 firms had closed their business, 234 firms did not answer during follow-up telephone calls, and 250 firms were not approachable during the period of data collection, and only 99 completed questionnaires returned, this made up a response rate of 12.9% (99/769). A total sample of 162 managers were then recruited in Round 3.

Measures

The Stress at work Questionnaire was adopted as the instrument for the study. It consists of a brief introduction to the study, 22 bibliographic questions, the Occupational Stress Indicator-2 (OSI-2) (90 items) (Section 1 to 5), the Work Locus of Control (16 items) - Section 6, and Hofstede's scales (20 items) - Section 7. But results obtained in Section 3A (measures Type A behaviour) and Section 7 (Hofstede's scales) were not analysed in this study.

The originally written Occupational Stress Indicator (OSI) (Cooper et al., 1988) has been widely used in some European countries and Hong Kong, and has established

reliability and both predictive and criterion validity (Cooper & Bramwell, 1992; Kirkcaldy & Cooper, 1993; Langan-Fox & Poole, 1995; Rees & Cooper, 1991; Robertson, Cooper & Williams, 1990; Siu, Cooper, and Donald, 1997).

The OSI-2 is a revised and shortened version of the OSI consisting of: Section 1 - Job Satisfaction (12 items measuring Job itself and The Organization; high scores indicate greater satisfaction); Section 2A - Mental well-being (12 items measuring Contentment, Resilience and Peace of Mind; high scores denote greater well-being); Section 2B - Physical well-being (6 items measuring Calmness and Energy; high scores indicate better physical health); Section 3B - Control Personality (4 items measuring locus of control; high scores denote greater perceived control over one's environment); Section 4 - Sources of Stress (40 items measuring workload, relationships, home/work balance, managerial role, personal responsibility, hassles, recognition, and organization climate; high scores indicate more sources of stress); and Section 5 - Coping Strategies (10 items measuring control and support; high scores denote more frequent use of coping strategies).

The Work Locus of Control scale (Section 6) was developed by Spector (1988). It consists of 8 items measuring 'internal' and 8 items measuring 'external' personality.

Chinese Locus of Control. Six Chinese idioms reflecting the orientation of internal and external traits were constructed by the author, with two items measuring internal and four items measuring external. This scale was used to validate the Control Personality scale and the Work Locus of Control scale.

Objective measures are used in some of the items in measuring bibliographic data. Example items are:

- "No. of days of absence due to personal sickness, and no. of days of absence due to sickness of family member"
- "How many times in applying for another job in past 12 months"
- "Habits of smoking, drinking, and doing regular exercise"

All of the items in the questionnaire were translated into Chinese by the author and back translated into English by a professional translator.

Results

Sample Distribution

Table 1 presents a detailed description of the sample distribution in the three rounds of study.

Table 1. Sample Distribution in the Three Rounds of Study in Hong Kong Managers

	Round 1	Round 2	Round 3
Age (in years)			
40 or below	212 (79.4%)	150 (82.1%)	102 (66%)
41 or above	55 (20.6%)	35 (17.9%)	53 (34%)
Mean	34.60	33.44	38.47
S. D.	10.20	8.49	10.91
Gender			
Male	159 (57%)	114 (60%)	101 (62.3%)
Female	120 (43%)	76 (40%)	58 (35.8%)
Did not answer	nil	2 (1%)	3 (1.9%)
Education Level			
Secondary	71 (25.5%)	66 (35.5%)	20 (12.8%)
College /Degree	184 (66.2%)	106 (57.1%)	116 (72.5%)
Postgraduate	20 (7.2%)	10 (5.3%)	22 (13.8%)
Others	3 (1.1%)	4 (2.2%)	2 (1.3%)
Marital Status			
Single	132 (47.3%)	87 (47.3%)	47 (30%)
Married	138 (49.5%)	91 (49.5%)	102 (64%)
Others (Co-habiting, Separated, Divorced, Widowed)	9 (3.3%)	6 (3.2%)	10 (6%)
Did not answer	1 (0.4%)	8 (4.2%)	3 (1.9%)
No. of years with present company			
Mean	7.05	6.11	9.96
S. D.	8.13	6.58	9.09
Mode	1 - 5 years	1 - 5 years	1 - 5 years
Level of Job			
Top management	48 (17.1%)	9 (4.9%)	50 (32.9%)
Senior management	43 (15.4%)	28 (15.2%)	32 (21.1%)
Middle management	91 (32.5%)	83 (45.1%)	50 (32.9%)
Junior management	90 (32.1%)	50 (27.2%)	17 (11.2%)
Others	8 (2.9%)	14 (7.6%)	3 (2%)
Did not answer	nil	8 (4.2%)	10 (6.2%)
No. of working hours per week			
40 or below	84 (30%)	46 (24.5%)	47 (29.9%)
41 to 50	167 (60%)	124 (66%)	84 (53.5%)
51 or above	28 (10%)	18 (9.6%)	26 (16.6%)
Mean	44.62	45.00	46.54
S. D.	7.32	7.00	8.80
Range	8 to 100	11 to 84	30 to 88
Smoking Habit			
Yes	26 (9.3%)	32 (16.7%)	19 (11.7%)
No	253 (90.4%)	158 (82.3%)	138 (85.2%)
Did not answer	1 (0.4%)	2 (1%)	5 (3.1%)
Drinking Habit			
Yes	57 (20.4%)	53 (27.6%)	58 (35.8%)
No	221 (78.9%)	135 (70.3%)	99 (61.1%)
Did not answer	2 (0.7%)	4 (2.1%)	5 (3.1%)
No. of days of sick leave in the past three weeks			
Mean	0.72	1.23	0.81
S. D.	1.32	2.46	1.63

Managing in an 'ideal' exercise programme			
Always	16 (5.7%)	6 (3.1%)	13 (8%)
Usually	38 (13.6%)	27 (14.1%)	29 (17.9%)
Sometimes	68 (24.3%)	47 (24.5%)	34 (21%)
Occasionally	104 (37.1%)	65 (33.9%)	63 (38.9%)
Never	51 (18.2%)	45 (23.4%)	18 (11.1%)
Did not answer	3 (1.1%)	2 (1%)	5 (3.1%)
Quitting Intention			
Never	37 (13.3%)	35 (18.7%)	41 (26.1%)
Rarely	53 (19.0%)	35 (18.7%)	42 (26.8%)
Sometimes	121 (43.4%)	90 (48.1%)	49 (31.2%)
Somewhat often	23 (8.2%)	10 (5.3%)	11 (7%)
Quite often	27 (9.7%)	11 (5.9%)	7 (4.5%)
Extremely often	18 (6.5%)	6 (3.2%)	7 (4.5%)
Did not answer	2 (0.7%)	5 (2.6%)	5 (3.1%)

As mentioned earlier, the data in Round 2 was not collected by random sampling method, the degree of similarity of the first two rounds of descriptive findings was calculated and the correlation coefficients are summarized in Table 2. Generally speaking, almost all the descriptive items of the two rounds of research were found to be highly similar for the coefficient had at least significantly attained the value of 0.9, except the items of 'rank' and 'working hours per week' in which their respective coefficient values had not reached the level of $p < 0.05$ or $P < 0.01$.

The sample distribution in Round 3 is quite similar to those in Round 1 and 2, except there were more older managers, more college/degree holders, more married managers, and more managers were in senior and top management in Round 3. It may be attributed to the fact that 99 out of 162 respondents in the Round 3 were recruited from the *Members' Business Directory of The Chinese General Chamber of Commerce 1997*, in which most of the members are in senior or top management posts, and therefore it is more likely that they are older and are married.

Table 2 Degree of Similarity of the First Two Rounds of Descriptive Findings by R

Item	R
Marital Status	1.00**
Educational Level	0.93**
Age	1.00**
Days of Work	1.00**
Company Size	1.00**
Department	0.91*
Sick Leave	1.00**
Leave for Non-Sick Reason	1.00**
Quitting Intention	0.98**
Rank	0.82
Working Hours per week	0.99

Note:
* $P < 0.05$ ** $p < 0.01$

Reliabilities of Scales

The reliabilities of the scales used in the study are presented in Table 3. The reliabilities of most of the scales are consistently high in the three rounds of data, except 'managerial role', 'support coping', and 'control personality'. The low value of 'coping strategies' in the second and third round of data is due to the low score in 'support coping' in these two rounds. The alpha for 'Chinese locus of control' in the third round is also low.

Stressor- Strain Relationships

Table 4 depicts the relationships between sources of stress, job satisfaction, mental well-being, physical well-being, absenteeism, and quitting intention. In general, managers who perceived more sources of stress had less job satisfaction, worse mental and physical well-being, higher absenteeism and quitting intention. But there were more significant relationships in Round 1 than the other two rounds. Therefore the first hypothesis can only be partially supported.

The results also showed that there is high predictive validity in the data obtained, in which there was positive and statistically significant relationship between mental and physical well-being; there was positive and statistically significant relationship between job satisfaction and mental well-being; and quitting intention was negatively and statistically significantly related to job satisfaction, mental well-being, and physical well-being respectively.

Table 3. Reliabilities of Scales in the Three Rounds of Study in Hong Kong Managers

	Round 1			Round 2			Round 3		
	Mean	S. D.	Alpha	Mean	S. D.	Alpha	Mean	S. D.	Alpha
Sources of Stress	151.75	25.34	.93	151.47	26.47	.88	151.63	25.81	.89
: Workload	23.41	5.20	.80	23.60	5.19	.73	23.69	5.58	.84
: Relationships	31.44	6.48	.74	31.20	7.09	.54	31.55	6.62	.88
: Home/work balance	21.72	5.32	.79	21.90	5.08	.82	21.95	4.99	.78
: Managerial role	13.44	3.02	.54	13.46	3.09	.58	13.21	3.18	.60
: Personal responsibility	15.92	3.35	.73	16.13	3.03	.69	16.02	3.06	.67
: Hassles	14.67	2.95	.63	14.69	2.94	.61	14.55	3.13	.60
: Recognition	15.59	3.91	.83	15.62	3.74	.71	15.53	3.86	.81
: Organizational climate	15.23	3.07	.67	15.47	2.90	.60	15.45	2.80	.62
Job satisfaction	42.89	9.70	.91	44.41	8.79	.92	45.13	10.99	.83
Mental well-being	46.41	8.76	.84	45.94	8.15	.82	49.93	8.60	.74
Physical well-being	19.02	4.90	.74	19.05	4.51	.73	23.53	4.57	.72
Coping	40.93	6.30	.80	40.76	5.01	.41	42.28	5.24	.46
: Control coping	25.20	4.32	.82	24.83	3.66	.79	26.24	3.75	.77
: Support coping	15.74	3.22	.68	15.89	2.57	.43	16.04	2.68	.48
Control personality	29.08	1.77	.54	29.30	1.71	.58	29.40	1.76	.42
Work locus of control	47.34	8.77	.77	47.89	7.79	.68	45.46	8.59	.73
Chinese locus of control	20.35	4.08	.70	16.98	3.25	.72	17.37	2.80	.55

Table 4. Relationship between Stressors, Health effects and Job Strains

	1	2	3	4	5	6
Round 1						
1. Sources of stress						
2. Job satisfaction	-.22*					
3. Mental well-being	-.12*	.19**				
4. Physical well-being	-.17**	.23***	.25***			
5. Absenteeism	.16**	-.09	-.14*	-.11		
6. Quitting intention	.18**	-.61***	-.17**	-.18**	.17**	
Round 2						
1. Sources of stress						
2. Job satisfaction	.01					
3. Mental well-being	-.19*	.22**				
4. Physical well-being	-.25***	.12	.43***			
5. Absenteeism	.07	-.03	-.03	-.14		
6. Quitting intention	.11	-.53***	-.20**	-.20**	.09	
Round 3						
1. Sources of stress						
2. Job satisfaction	-.08					
3. Mental well-being	-.17	.40***				
4. Physical well-being	-.14	.26***	.46***			
5. Absenteeism	.12	-.09*	-.07	-.20**		
6. Quitting intention	.19*	-.62***	-.35***	-.32**	.22**	
Note.	* p < .05	** p < .01	*** p < .001			

Relationship between Age, Health Effects, and Job Strains

Table 5 depicts the correlational analysis between age, health effects, and job strains. It can be seen from Table 5 that age was positively related to job satisfaction, mental well-being, and negatively related to quitting intention. Unexpectedly, age was positively related to physical well-being in Round 1. Therefore the second hypothesis can only be partially supported.

Table 5. Relationship between Age, Health effects, and Job Strains

	Job satisfaction	Mental well-being	Physical well-being	Absenteeism	Quitting intention
Round 1					
Age	.36***	.15*	.34***	-.16**	-.43***
Round 2					
Age	.23*	.17*	ns	ns	.23*
Round 3					
Age	.27***	.21*	ns	-.21**	-.31**
Note.	ns - non significant	* p < .05	** p < .01	*** p < .001	

Relationship between Coping Strategies, Health Effects, and Job Strains

The results of the correlational analysis between coping strategies, health effects, and job strains are presented in Table 6. It shows that, in general, managers employed more coping strategies, in particular control coping, had greater job satisfaction, better mental well-being, less absenteeism and quitting intention. But the relationship between coping and physical well-being was not strong. Therefore the third hypothesis can be partially supported.

Table 6. Relationship between Coping Strategies, Health Effects, and Job Strains

	Job satisfaction	Mental well-being	Physical well-being	Absenteeism	Quitting intention
Round 1					
Coping	.12*	ns	ns	ns	-.14*
- Control	.25***	.33***	.16**	ns	-.21***
- Support	ns	ns	ns	.17*	ns
Round 2					
Coping	.21**	.21**	ns	ns	-.15*
- Control	.22**	.26***	ns	ns	-.21**
- Support	ns	ns	ns	ns	ns
Round 3					
Coping	.19*	ns	ns	-.16*	ns
- Control	ns	.17*	ns	-.17*	ns
- Support	.18*	ns	ns	ns	ns
Note.	ns - non-significant	* p < .05	** p < .01	*** p < .001	

Relationship between Locus of Control, Health Effects, and Job Strains

Table 7 depicts the correlational analysis between perceived control (control personality, work locus of control, and Chinese locus of control), health effects, and job strains. The results shows that control personality had no effect on any of the health or strain effects of work stress. Both measures of work locus of control and Chinese locus of control demonstrated that managers who were externals were those who had lower job satisfaction, worse mental well-being, and higher quitting intention. Therefore the fourth hypothesis can be partially supported.

Table 7. Relationship between Control, Health Effects, and Job Strains

	Job satisfaction	Mental well-being	Physical well-being	Absenteeism	Quitting intention
Round 1					
LC	ns	ns	ns	ns	ns
WLCS	-.41***	-.35***	-.13*	ns	.29**
CLC	ns	-.32***	ns	ns	ns
Round 2					
LC	ns	ns	ns	ns	ns
WLCS	-.29***	-.36***	-.38***	ns	.23*
CLC	ns	-.28***	-.24***	ns	ns
Round 3					
LC	ns	ns	ns	ns	ns
WLCS	-.34***	-.31**	ns	ns	.23**
CLC	ns	-.17*	ns	ns	ns

Note. LC - Control personality
ns - non significant WLCS - Work locus of control * p < .05 ** p < .01 *** p < .001
CLC - Chinese locus of control

Relationship between Age, Coping, and Locus of Control

The correlational analysis between age, coping, and locus of control is presented in Table 8. The results show that older managers employed more control coping and less support coping. The data in Round 2 also shows that older managers employed less support coping. Therefore the fifth hypothesis can be supported partially.

Table 8 also shows that older managers in the first round of data were more likely to be externals, and perceived more control over the environment. But age had no effect on locus of control in the second and third round of data. Therefore the sixth hypothesis can only be partially supported.

It can be seen from the same table that externals employed less control coping strategies in the first two rounds of data. Therefore the seventh hypotheses can be supported partially.

The construct validity of locus of control can be demonstrated by the results presented in Table 8 that control personality was negatively correlated to external locus of control in Round 1 and 3; and work locus of control and Chinese locus of control were positively correlated in the three rounds of data.

Table 8. Intercorrelations between Age, Coping, and Control

	Age	Coping	Control	Support	LC	WLCS	CLC
Round 1							
Age							
Coping	ns						
- Control	.18**	.88***					
- Support	-.14*	.77***	.37***				
LC	.20**	ns	ns	ns			
WLCS	-.13*	ns	-.15*	ns	-.16*		
CLC	ns	ns	-.16*	ns	-.19**	.34***	
Round 2							
Age							
Coping	ns						
- Control	ns	.87***					
- Support	-.16*	.71***	.28***				
LC	ns	ns	ns	ns			
WLCS	ns	-.29***	-.30***	ns	ns		
CLC	ns	-.16*	-.23**	ns	-.20**	.42***	
Round 3							
Age							
Coping	ns						
- Control	ns	.87***					
- Support	ns	.73***	.31***				
LC	ns	.27***	.21*	.25**			
WLCS	ns	ns	ns	ns	-.17*		
CLC	ns	ns	ns	ns	ns	.32***	

Note. LC - Control personality
ns - non significant WLCS - Work locus of control * p < .05 ** p < .01 *** p < .001
CLC - Chinese locus of control

Difference between Older and Younger Managers

Table 9 shows the t-tests of the means of the job stressors, job strains, and moderator/mediator variables between older and younger managers in the three rounds of data. In Round 1, out of the eight stressors, younger managers perceived seven of them (except managerial role) as more the sources of stress to them than their older counterparts. Further, older managers had greater job satisfaction, better mental and physical well-being, but higher quitting intention than younger managers. Concerning coping and locus of control, older managers employed more control coping and less support coping strategies to cope with work stress; and had more control over the environment, and were less likely to be externals than their younger counterparts. In

Round 2, the results also show that older managers perceived 'home/work balance', 'recognition', 'relationships', and 'organizational structure and climate' as less stressors to them; and had less quitting intention than their younger counterparts. In Round 3, older managers perceived 'recognition' as less a stressor, had greater job satisfaction, better mental well-being, and less quitting intention than younger managers. Therefore, there were more differences between older and younger managers in the first round of data, the eighth hypothesis can only be partially supported.

Differences Before and After the Handover in 1997

A series of *t*-tests on the job stressors, job strains, and moderator /mediator variables were conducted between Round 1 and Round 2. The results showed that there was no difference between the first two rounds of data, except "Chinese locus of control" (mean in Round 1 = 17.68, mean in Round 2 = 16.98, $t = 2.24, p < .05$). It seems that there was virtually no difference in the means of job stressors, job strains, and moderator /mediator variables before and after the Handover in 1997. Therefore the ninth hypothesis cannot be supported.

Differences Before and After the Asian Financial Crisis

In comparing data in Round 2 and Round 3, there were only differences in 'mental well-being' (mean in Round 1 = 46.37, mean in Round 2 = 49.93, $t = -3.9, p < .001$), 'coping strategies' (mean in Round 1 = 40.76, mean in Round 2 = 42.28, $t = -2.76, p < .01$), and 'control coping' (mean in Round 1 = 24.83, mean in Round 2 = 26.24, $t = -3.55, p < .001$). It appeared that the managers in Round 3 had better mental well-being and employed more coping than those in Round 2. Therefore the tenth hypothesis can only be slightly supported.

Table 9. Mean Differences in Job Stressors, Job Strains, and Moderator Variables for Younger and Older Managers

	Younger mean	Round 1 Older mean	<i>t</i> -value	Younger mean	Round 2 Older mean	<i>t</i> -value	Younger mean	Round 3 Older mean	<i>t</i> -value
Total stressors	154.42	135.00	3.47**		ns			ns	
Workload	24.16	21.33	3.69***		ns			ns	
Managerial role		ns			ns			ns	
Hassles	14.84	13.89	2.15*		ns			ns	
Home/work balance	22.41	20.18	2.88**	22.17	19.84	2.29*		ns	
Recognition	16.14	13.68	4.28***	16.07	13.97	2.96**	15.90	14.45	2.16*
Relationship	32.11	29.65	2.43*	31.84	28.45	2.48*		ns	
Organizational structure & climate	15.50	14.41	2.41*	15.69	14.33	2.45*		ns	
Personal responsibility	16.19	15.11	2.18*		ns			ns	
Job satisfaction	41.56	50.17	-4.61***		ns			ns	
Mental well-being	45.36	50.48	-3.92***		ns			ns	
Physical well-being	22.15	27.95	-5.45***		ns			ns	
Absenteeism		ns			ns			ns	
Quitting intention	2.64	3.44	-5.17***	2.83	2.29	2.50*	2.82	1.82	5.09***
Coping strategies		ns			ns			ns	
Control coping	24.83	26.83	-3.06**		ns			ns	
Support coping	15.97	14.81	2.38*		ns			ns	
LC	12.65	14.30	-2.76**		ns			ns	
WLCS	47.91	42.76	2.64**		ns			ns	
CLC		ns			ns			ns	

Note. LC - Control personality WLCS - Work locus of control CLC - Chinese locus of control
 ns - non significant * $p < .05$ ** $p < .01$ *** $p < .001$

Discussion

The present study examined the effects of coping and locus of control on managerial stress in Hong Kong; and to investigate age differences in perceived stressors, job strains, coping strategies and locus of control. The results largely support the model presented in Figure 1 in that the stressors appeared to be associated with worse health effects (low job satisfaction, worse mental and physical well-being), and more job strains (high absenteeism and quitting intention). These results corroborated previous studies in Western societies (Ganster & Schaubroeck, 1991; Sullivan & Bhagat, 1992) and Hong Kong (Sin et al., 1995; Siu, et al., 1997). The relationships between age, work stress, coping, and locus of control will be discussed in separate sections as follows:

Age and Work Stress

There have been much controversies existed concerning age and stress, the results obtained from this study may help to provide some evidence that older managers reported less perceived stressors, greater job satisfaction, better mental and physical well-being, and less quitting intention than younger managers. These results support previous findings in Western societies (e.g. Aldwin, 1990; Loitegui, 1990) and Taiwan (Chen et al., 1982; Huang, 1986; Hsu, 1977; Li et al., 1982; Su et al., 1992). Perhaps the explanation offered by Schabracq and Winnubst (1996) is quite relevant here: Employees aged between 50 and 65 is still a powerful generation, "because its members occupy many key positions in the upper layers of society. To the degree that older employees in the upper layers experience problems, they are often in a position to solve these problems themselves or to find someone who can help them" (pp. 277-278).

The implications of these results are twofold: first, older executives or managers should not be stereotyped as senile or incapable; second, employers should think of employing more older managers, as they have less strain symptoms and therefore they are less costly to the organization in terms of absenteeism or turnover.

Age, Stress, and Coping

The direct effects of coping, in general, lead to greater job satisfaction and mental well-being, and less quitting intention. These results support previous studies (Bhagat et al., 1985; Cohen, 1987). Control coping, in this study, was found to be more effective than support coping in enhancing health effects and reducing strain effects. These results corroborated previous studies (Aldwin et al., 1987; McCrae et al., 1986; Scheier et al., 1992).

Further, older managers employed more control coping, whereas younger managers employed more support coping (see Table 9). These results are similar to those obtained from previous studies (e.g. Aldwin et al., 1985; McCrae, 1982). They found older adults employed less escapist or avoidant coping. Perhaps, as Aldwin (1991) suggested, through experience, people increase their coping repertoires and become more able to successfully cope with difficulties.

Age, Stress, and Locus of Control

As far as control personality is concerned, Hong Kong managers who perceived more control over their environment exhibited greater job satisfaction, had better mental and physical well-being, and less quitting intention. Similarly, managers who were

externals had less job satisfaction, worse mental or physical well-being, and more quitting intention (see Table 7). These results corroborated previous findings (e.g. Spector, 1986). Therefore the personality of locus of control is an important moderator in work stress research.

The research on age and locus of control has been inconclusive. But the results obtained from this study showed that older managers were found less likely to be externals. Further, externals used less control coping, and older managers employed more control coping in this study. One can infer from the aforementioned results that differences in coping might be due to differences in controllability. These results corroborated the explanation given by Blanchard-Fields et al. (1987). They suspected that differences in coping strategies between older and younger adults are attributed to differences in controllability. Yet the ordering of variables was still unclear. As Lazarus (1981) pointed out, coping can affect appraisal, and it may be that coping affect control personality or locus of control. To find out the causal directions between age, coping, and locus of control with more advanced path models is surely a new research area in the future.

In sum, except the last two hypotheses, almost all of the hypotheses are partially supported. The non-significant differences between the first and second round of data (i.e. before and after the Handover in 1997), and those between the second and the third round of data (i.e. before and after the outburst of the Asian financial crisis) may be due to the fact that the three to four months duration is not long enough to exert any impact on health effects or job strains. Yet one can still argue that after the outburst of the financial crisis, people bound to employ more coping strategies which was shown in the significant increase in coping in the third round of data as compared to the second round of data.

Validation of Data

The reliabilities of all of the subscales of the OSI-2 were reasonably high. The predictive validity of the health and strain effects were also high: there were statistically significant correlations between job satisfaction and mental well-being, job satisfaction and physical well-being, and between mental and physical well-being. Further, sources of stress were negatively related to job satisfaction, mental and physical well-being; but were positively related to quitting intention. Concerning strain effects, absenteeism and quitting intention were positively correlated.

The construct validity of locus of control was demonstrated by the significant and positive relationship between Chinese locus of control and external locus of control, and the significant and negative relationship between control personality and external locus of control.

Limitations

There are a number of caveats in the present study. Firstly, the results of the study were based almost on the use of self-report instruments. Secondly, a static group design method was employed to collect data in some parts of the study. Thirdly, the sample size in the three round of study were small and unequal. Most important of all, the samples cannot be considered as representative. Therefore a larger scale longitudinal study using entirely random sampling method with more objective measures should be employed in future studies.

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Asia-Pacific Institute of Ageing Studies (APIAS) at Lingnan College

APIAS has a number of objectives:

- *to expand teaching and research in social gerontology in Lingnan College, Hong Kong and the region*
- *to assist in the strengthening of undergraduate, postgraduate and professional training in areas related to health and welfare of elderly people, demography and epidemiology.*
- *to enhance knowledge, awareness and understanding of ageing in society amongst students, professionals and the wider public.*
- *to encourage cross-cultural research and co-operation on ageing in the Asia-Pacific region*

APIAS aims to achieve these objectives:

- *by fostering local and international research and other links*
- *by adopting an explicitly multi-disciplinary orientation to research, teaching and professional development*
- *by providing a base for international researchers and visiting scholars.*
- *by attracting support and funding for research and training*
- *by producing and stimulating the production of research outputs for international refereed journals and other high-quality publications*
- *by providing a service to the professional and academic communities through the development of a resource base of publications and data on issues related to population ageing*

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