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Working Hours and Stress in Different Satisfaction Situations: A Study of 180 Merchandising Staff in Hong Kong

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ABSTRACT

Background: Long working hours have negative effects on employee health and safety in terms of performance, fatigue, psychological and physiological health, safety, and the work-life balance. As a result of globalization, it has become increasingly common internationally for people to work long hours. Many researchers have investigated the relationships among working hours, work stress, and job satisfaction in Western countries, but little research has been conducted in the Chinese community to determine the relationships between working hours and work stress, especially in different job satisfaction situations. The job nature of textile and clothing merchandising staff in Hong Kong is different from that in Western countries. The large time difference between Hong Kong and its two major markets, Europe and the United States, may result in longer working hours. The influence of these long working hours on the lives of staff members may thus be different from that in Western industries.
Purpose: The main objective of this project is to investigate the influence of working hours on the work stress of Hong Kong textile and clothing merchandising staff with the mediation of job satisfaction.
Methodology: Data from 180 merchandising staff members have been collected by questionnaire for multiple regression analysis.
Findings: The results suggest that people who report longer working hours generally suffer from higher levels of work stress. Although the influence of long working hours on work stress is weaker in high job satisfaction situations than it is in low job satisfaction situations, it is still statistically significant. Lastly, the results also suggest that job satisfaction plays an important role in mediating the influence of long working hours.

Keywords: Long working hours, work stress, job satisfaction, merchandising staff, textiles and clothing.

Hong Kong's light industries, such as the clothing industry, developed quickly between the 1950s and the 1970s (The Hong Kong Productivity Council [HKPC], 1993). Textiles and clothing are important industries for Hong Kong. In 2000, the textile and clothing industry had about 66,000 employees, 29% of the total number of workers in all manufacturing industries. Its export value was about HK$87 billion, 49% of total exports from Hong Kong (HKPC, 2003).

Previously, Hong Kong's textile and clothing industry was based on manufacturing, but its role has gradually changed to one of market development and purchasing (HKPC, 1993, 2003; Chan, 1999). In the 1990s, Hong Kong's economy grew rapidly, which increased the cost of land and labor and resulted in many manufacturers moving their production bases to the mainland (Recruit.com.hk, 2003). Therefore, the role of merchandising staff has become increasingly important in Hong Kong. The duties of merchandising staff are quite broad, and thus it is thought that they have heavy workloads and suffer from high levels of work stress (HKPC, 1993). Also, according to the information provided by one merchandiser during an interview (Recruit.com.hk, 2003), it is unavoidable that merchandisers suffer from long working hours. One of the main reasons for this is the large time difference between Hong Kong and its two major markets, Europe and the United States. Merchandising staff may need to work at night to respond quickly to Western customers, but work during the day cannot be avoided because many manufacturers are located in Asian countries (HKPC, 1993, 2003; Chan, 1999). Thus, the influence of long working hours on the lives of merchandising staff in Hong Kong may be distinct from that of employees in Western industries, which makes them an ideal group for such an investigation.

The main purpose of this project is to investigate the influence of working hours on the levels of work stress among fashion and textile merchandising staff in different job satisfaction situations. It is intended to help merchandising managers decide on and control the number of working hours with a consideration of job satisfaction so that the health and safety of their staff members can be improved.

Literature review

Job satisfaction

Before a discussion of the facets and effects of job satisfaction, it is necessary to understand what is meant by job satisfaction. Spector (1997, p. 2) writes that "job satisfaction is simply how people feel about their jobs and different aspects of their jobs. It is extended to which people like (satisfaction) or dislike (dissatisfaction) their jobs." Meanwhile, Locke (1976, p. 1300) notes that job satisfaction can be seen as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences."

Job satisfaction has been well defined by scholars. Although there is still some disagreement about the different facets of job satisfaction (Spector, 1997), they can generally be divided into four areas: rewards, other people, the nature of the work, and the organizational context (Locke, 1976). In addition to the different facets of job satisfaction, Spector (1997) has summarized the potential effects of job satisfaction. Lower job satisfaction leads to lower job performance, a greater encouragement of withdrawal behavior, a higher turnover rate, greater burnout, poorer physical health and psychological well-being, more counterproductive behavior, and lower life satisfaction. There is no doubt that job satisfaction strongly influences an employee's health both within and outside of the workplace. Thus, many large organizations strive to increase the job satisfaction of their employees to benefit themselves. For example, according to

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Spector (1997), IBM conducts opinion surveys annually to find out, among other information, how employees feel about their jobs.

Job satisfaction works as one of the factors that mediate the influence of long working hours. Van der Hulst and Geurts (2001) have carried out research to investigate this mediating role of job satisfaction. Out of 751 full-time employees of the Dutch Postal Service, 535 were selected for data analysis. Overtime, the pressure to work overtime, and rewards were defined as the independent variables, and psychosomatic health complaints, poor recovery, burnout, and work-home interference were measured as the dependent variables. In general, overtime was related to negative work-home and home-work interference. Split-sample logistic regression analyses indicated that employees who reported low rewards had an increased risk of burnout, negative work-home interference, and slow recovery. Also, the combination of overtime and low rewards was related to negative home-work interference. In a second analysis, low rewards and a high level of pressure to work overtime were related to an increased risk of poor recovery, burnout, and negative work-home interference. Finally, Van der Hulst and Geurts (2001) note that a limited number of hours of involuntary overtime is related to adverse mental health, but only in a low rewards situation. Their conclusion suggests that job satisfaction itself plays an important role that influences recovery, work-home interference, and the mental health of employees.

In their research, they also mentioned the effort-recovery model that was developed by Meijman and Mulder (1998). According to this model, employees expend effort, including mental and physiological effort, to finish work tasks. If the rate of expenditure outweighs the rate of recovery, then negative outcomes such as fatigue are accumulated. Meijman and Mulder (1998) also note that the willingness to expend effort is associated with the workload level. In other words, employees with a high level of job satisfaction tend to be more willing to expend effort on their work.

After this review of some of the literature that is related to job satisfaction, it can be summarized that job satisfaction appears to be negatively associated with work stress and that it mediates the influence of long working hours. Therefore, when the influence of the number of working hours on work stress is studied, it is necessary to measure job satisfaction.

Work stress

The word "stress" comes from the Latin word *strictus*, which means "to tighten" (Jex, 1998). Although many definitions of work stress can be found in textbooks, none describes the term perfectly (Jex, 1998; Fields, 2002; Buunk et al., 1998). Two definitions of work stress suggested by two well-known organizations are presented in this research. According to the U.K.'s Health and Safety Executive (HSE, 2004), work-related stress is defined as "the adverse reaction people have to excessive pressure or other types of demand placed on them." The U.S. National Institute for Occupational Safety and Health (NIOSH, 1999, p. 6) notes that "work stress can be defined as harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, [and] needs of the workers." In sum, work stress is an adverse response.

Work stress is caused by the interactions between workers and their working conditions. Any mismatch between worker characteristics and working conditions may produce work stress (NIOHS, 1999). To explain the work stress process, NIOSH (1999) developed a simple model called the "NIOSH Model of Job Stress." Exposure to stressful job conditions (job stressors) can have a direct influence on worker health and safety. Individual and other situational factors then mediate that

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influence by strengthening or weakening it. The risk of injury and illness is the final result. Although the NIOSH Model of Job Stress is simple and can be easily understood, it fails to mention that negative outcomes may be recycled to influence individual and other situational factors. Indeed, the cumulative negative outcomes should be able to change the individual ability to withstand work stress.

What are job stressors? Spector (2000) suggests that job stressors include 1) role ambiguity and role conflict, 2) workload, 3) control, and 4) machine pacing. However, although Spector successfully considers the job stressors that result from the nature of the work, he neglects the job stressors that result from the working environment. For example, it has been proved that excessive exposure to heat and noise can contribute to work stress (Parsons, 2003; Guski, Felscher-Suhr, & Schuemer, 1998).

Work stress can influence the psychological and physiological health of workers. It is believed that sleep disturbances, musculoskeletal disorders, and cardiovascular disease are highly correlated to work stress (NIOSH, 1999). In addition to health problems, work stress can indirectly influence worker safety through a reduction in performance. High levels of productivity can be attributed to low-stress work. Despite working in offices that have safe environments, merchandising staff sometimes need to transport samples in their workplaces. A reduction in performance may increase the risk of injury during manual handling.

White and Beswick (2003) carried out a review and summarized that there is evidence that generally points to an association between working hours and stress and other negative psychological health outcomes. In fact, it is not difficult to understand the mechanism underlying this association. When employees work longer hours, they have a greater possibility of exposure to stressful events (job stressors).

Schmitt, Colligan, and Fitzgerald (1980) studied the correlations between reported physical symptoms and various possible indicants of stress and certain job variables. Data from 862 people in eight U.S. organizations were collected for analysis. They found that the correlation between the reported symptom variables and the hours of overtime worked was small but significant at a 95% confidence level. A study of British accountants (Daniels & Guppy, 1995) also concluded that long working hours are related to poorer psychological health because of the increased workload.

There has also been research in Hong Kong – carried out by Lingnan University (2001) and Caritas Hong Kong (2001) – that investigates the influence of long working hours on work stress. Lingnan University (2001) conducted a telephone survey and collected data from 1,514 employees who were aged 15 or above. No particular occupation was specified in the study. According to the findings, frequent overtime work is one of the variables associated with heavy work stress. Caritas Hong Kong (2001) studied how long working hours affect physiological and psychological health, family life, social activities, work performance, and study. The researchers defined 10 or more hours a day as long working hours. However, they failed to investigate how the number of working hours influences psychological health because no control group was included for comparison. As a result, the study only reflected how workers who worked 10 or more hours a day felt about the influence of long working hours. In fact, the researchers made a mistake in assuming that there must be an association between long working hours and negative outcomes.

Despite the fact that many studies have found an association between working hours and psychological health, two studies

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(Van der Hulst and Geurts, 2001; Oppenheim, 1987) have suggested that there is not necessarily a correlation between the two. One of these studies, that conducted by Van der Hulst and Geurts (2001), has been reviewed in the job satisfaction sub-section of this paper and so will not be discussed further here. Oppenheim's (1987) research is a study of music therapists. In this study, the link between working hours and occupational stress is insignificant. The reason may be that certain factors mediate the influence of long working hours. According to Davis (1999), music therapy is a method used to solve health problems through the use of music or rhythm. The presence of music may provide an attractive workplace environment for music therapists, and so no significant link was identified. Of course, further investigation is required to confirm this inference.

Methodology

This project is based on the quantitative approach and measures the influence of long working hours and job satisfaction on the work stress of merchandising staff. Survey questionnaires were sent to merchandising staff for data collection. The Workplace Stress Scale (Marlin Company & American Institute of Stress, 2001) and the Michigan Organization Assessment Questionnaire Subscale (Cammann et al., 1979) were used to obtain the work stress and job satisfaction levels of the participants, respectively. Multiple regression models were first applied to examine the influence of weekly working hours and job satisfaction on the work stress of textile and clothing merchandising staff and to test the following hypothesis.

H1: Long working hours have a significant and positive effect on the work stress of textile and clothing merchandising staff.

The respondents were then split into two groups according to their level of job satisfaction, and a second round of multiple regression analyses were carried out to test the following hypotheses.

H2: Long working hours have a significant and positive effect on the work stress of textile and clothing merchandising staff in a **low** satisfaction situation.

H3: Long working hours have a significant and positive effect on the work stress of textile and clothing merchandising staff in a **high** satisfaction situation.

In this research, 192 questionnaires were distributed to merchandising staff through friends, colleagues, and past colleagues; 186 were collected because six subjects failed to return their questionnaires. The data from 180 respondents were used for analysis because six of the questionnaires returned were incomplete. Most of the questions that were left blank were in the personal information section, perhaps because some respondents were unwilling to disclose their age and marital status.

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Analysis, results, and conclusions

Demographic characteristics of respondents

Of the 180 respondents, 113 (62.8%) were female and 67 (37.2%) were male. Table 4-1 shows the proportion of female to male respondents.

Table 4-1: Sex of Respondents

Sex	Frequency	Percent	Cumulative Percent
Male	67	37.2	37.2
Female	113	62.8	100.0
Total	180	100.0	

The largest age group (30%) was in the range of 31-35. The second largest group, accounting for 29.4% of the total, was 26-30. The third largest group (24.4%) was 21-25. Table 4-2 shows the age distribution of the respondents.

Table 4-2: Age of Respondents

Age	Frequency	Percent	Cumulative Percent
15-20	1	.6	.6
21-25	44	24.4	25.0
26-30	53	29.4	54.4
31-35	54	30.0	84.4
36-40	17	9.4	93.9
41 or above	11	6.1	100.0
Total	180	100.0	

There were 113 (62.8%) single and 67 (37.2%) married respondents. Table 4-3 shows the proportion of single to married respondents.

Table 4-3: Marriage Status of Respondents

	Frequency	Percent	Cumulative Percent
Single	113	62.8	62.8
Married	67	37.2	100.0
Total	180	100.0	

Number of weekly working hours

The weekly working hours of the 180 respondents were normally distributed. Approximately half of the respondents reported that they worked either 41-45 or 51-55 hours per week. The proportion of those working more than 60 hours per week was 5.6% greater than that of those working 56-60 hours. According to our observations, this may be because some of the respondents who reported working more than 60 hours per week may have worked more than 65. Therefore, the findings seem to suggest that the mean of the weekly working hours in this research may be underestimated. For the merchandising staff samples, the mean, median, and standard deviations of the reported weekly working hours were 52.69, 53.00, and 6.975, respectively.

In a telephone survey carried out by Lingnan University (2001), 1,394 employees aged 15 or above reported their number of weekly working hours. Table I shows the

distribution of the weekly working hours of the respondents in this study and those of the employees in the research conducted by Lingnan University (2001). Although the Lingnan University researchers reported a mean value of 49.9 weekly working hours, this figure cannot be compared with the mean value (52.69 hours per week) found in this project because different analytical methods and procedures were used. However, we can still observe that the sampled merchandising staff in this study tended to work longer hours than did the employees in the Lingnan telephone survey. Compared with the percentages of reported working hours in the telephone survey, those reported in this project (MS) were larger in the longer working hours groups (51-55, 56-60, and more than 60), but smaller in the shorter working hours groups (40 or fewer, 41-45, and 46-50). This finding is important because it supports the information that was provided by the aforementioned merchandiser (Recruit.com.hk, 2003) who noted that merchandising staff unavoidably work long hours.

Table I: Weekly working hours of respondents (MS) and employees in the telephone survey (LU) carried out by Lingnan University (2001)

Weekly Working Hours	Freq. (MS)	Freq. (LU)	Percent (MS)	Percent (LU)	Cumulative Percent (MS)	Cumulative Percent (LU)
40 or fewer	2	258	1.1	18.5	1.1	18.5
41-45	29	278	16.1	19.9	17.2	38.4
46-50	45	354	25.0	25.4	42.2	63.8
51-55	42	152	23.3	10.9	65.6	74.7
56-60	26	182	14.4	13.1	80.0	87.8
More than 60	36	170	20.0	12.2	100.0	100.0
Total	180	1394	100.0	100.0		

Reliability test

In this project, Cronbach's alpha was used to assess the degree to which the data are reliable. The results show that the internal consistency of the Michigan Organizational Assessment Questionnaire Subscale (Cammann et al., 1979) was good (alpha = .85), and the internal consistency of the Workplace Stress Scale (Marlin Company & American Institute of Stress, 2001) was acceptable (alpha = .75).

Work stress levels of respondents

The Workplace Stress Scale was created by the Marlin Company and the American Institute of Stress (2001) to measure employee work stress levels and to allow a comparison with the rest of the U.S. work force. The total scores can be classified into five groups: 15 or lower, 16-20, 21-25, 26-30, and 31-40. Higher scores represent higher levels of work stress. Table II shows the distribution of the total work stress scores of the respondents and U.S. workers in a telephone survey conducted by the Marlin Company and the American Institute of Stress (2001). In the 180 questionnaires, the largest range (43.4%) of total work stress scores was 21-25. The second and third largest ranges of total work stress scores were 16-20 and 26-30, respectively. The remaining ranges accounted for about 5% each.

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Table II: Total work stress scores of respondents (MS) and U.S. workers (AW) in a telephone survey (the Marlin Company and the American Institute of Stress, 2001)

Total Work Stress Score	Frequency	Percent (MS)	Percent (AW)
15 or below	**9**	**5.1**	**33**
16-20	**43**	**24.0**	**35**
21-25	**78**	**43.4**	**21**
26-30	**41**	**22.7**	**9**
31-40	**9**	**5.2**	**2**
Total	**180**	**100.0**	**100.0**

The 180 respondents had a mean score of 22.87. The minimum and maximum scores were 11 and 36, respectively. Table III shows the statistics of the total work stress scores of the respondents.

Table III: Statistical figures of total work stress scores of respondents

N	180
Mean	22.87
Median	23.00
Std. Deviation	4.757
Minimum	11
Maximum	36

Table IV shows the means of the total work stress scores of the respondents and those of the U.S. workers. It can be observed that the overall mean score of the respondents is higher than that of the U.S. workers. A one-sample t-test was used to test whether there is a mean difference in work stress between the respondents and the U.S. workers. The results show that t = 12.597, and the significance level is so small (.000) that the mean difference between the level of work stress in the two samples is statistically significant. In other words, the work stress of the sampled merchandising staff is significantly higher than that of the U.S. workers selected in the telephone survey. This finding is consistent with that of the Hong Kong Productivity Council (HKPC, 1993) that merchandising staff have heavy workloads and suffer from severe stress.

Table IV: Mean of total work stress scores of respondents (MS) and U.S. workers (AW) in a telephone survey (the Marlin Company and the American Institute of Stress, 2001)

	Mean (MS)	Mean(AW)
Male	23.76	18.6
Female	22.94	18.1
Single	23.11	N/A
Married	22.62	N/A
Overall	22.87	18.4

Test of Hypothesis 1

Multiple regression analysis was performed to predict the work stress levels of the merchandising staff based on their number of working hours and their level of job satisfaction. This analysis can also identify which independent variable has the greater ability to predict work stress. As only two respondents reported working fewer than 40 hours per week, they were grouped into the 41-45 groups for analysis.

In the regression procedure, work stress was applied as the dependent variable (Y1), which would be predicted by independent variables that represented the number of weekly working hours (X1) and job satisfaction (X2). Table V shows the correlations among the variables. The correlation between job satisfaction and weekly working hours is considered to be weak (-.165), whereas the correlation between job satisfaction and work stress is fairly strong (-.697). Also, the correlation between weekly working hours and work stress is weak to moderate (.329).

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Table V: Correlation matrix (work stress)

Variables	Job satisfaction	Weekly working hours	Work stress
Job satisfaction	1	-.165*	-.697**
Weekly working hours	-.165*	1	.329**
Work stress	-.697**	.329**	1

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

After the correlation matrix was reviewed, a model-building process was conducted to estimate the regression model and to assess the overall model fit. For illustration purposes, the "enter" procedure was employed to select the variables for inclusion in the regression variant. Table VI displays the multiple regression output.

Table VI: Multiple regression output with dependent variable as work stress

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.730	.532	.527	.408877

a-Predictors: (Constant), Job satisfaction, Weekly working hours

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.703	2	16.851	100.798	.000
Residual	29.591	177	.167		
Total	63.294	179			

a-Predictors: (Constant), Job satisfaction, Weekly working hours
b-Dependent Variable: Work Stress

Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.251	.160		26.518	.000
Weekly working hours	.09534	.023	.221	4.232	.000
Job satisfaction	-.492	.039	-.660	-12.669	.000

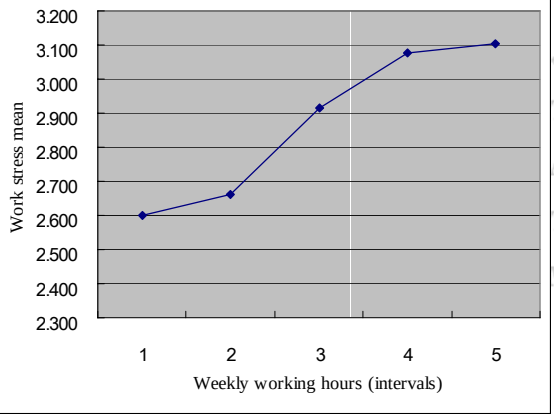
a-Dependent Variable: Work Stress

Multiple R is the correlation coefficient for the multiple regressions of the independent variables (weekly working hours and job satisfaction) and the dependent variable (work stress). This coefficient reflects the degree of association, which is fairly strong (.730), as it is above .70 (Nardi, 2003). The R square (R^2) is the correlation coefficient squared and is also called the coefficient of determination. This value indicates the percentage of the total variation of work stress that can be explained by weekly working hours and job satisfaction. In this case, the R^2 is .532, which tells us that 53.2% of the variation in work stress in this sample can be accounted for by a combination of weekly working hours and job satisfaction. The standardized coefficient (Beta) is a value that can be used to compare the effect of weekly working hours on work stress with the effect of job satisfaction on work stress. In this case, the

effect of job satisfaction (-.660) is stronger than that of weekly working hours (.221). As weekly working hours have t = 4.232 and a significance level (.000) below .05, Hypothesis 1, which states that "long working hours have a significant and positive effect on the work stress of textile and clothing merchandising staff," is supported

A scatter plot was created to see the relationships among weekly working hours, job satisfaction, and work stress. The scattered points appear in an uphill slope, and no irregular forms of correlations such as a U-shape tendency are identified. Finally, a line chart (see Figure 1) was also plotted to show the relationship between work stress and the number of working hours. It can be seen that work stress increases rapidly in the third group (which works 51-55 hours per week) and in the fourth group (56-60), but this rise slows down in the fifth group (more than 60 hours).

Figure 1: Work stress of respondents with different number of working hours



This increasing rate of work stress across different numbers of working hours provides us with some information about work stress. If the job satisfaction factor is not considered, then it is found that work stress increases rapidly beyond 50 hours a week. Therefore, those merchandising staff whose overtime work exceeds 50 hours per week should be concerned about the effects of work stress. It is interesting that the increase in work stress slows down in the group that works more than 60 hours per week. This may be because people who can no longer withstand the level of work stress choose to leave their jobs.

Tests of Hypotheses 2 and 3

Van der Hulst and Geurts (2001) suggest that the number of working hours is associated with adverse mental health, but only in low reward situations. Based on this finding, the respondents in this project were split into two groups, with the midpoint of the mean of job satisfaction at 3.40. One group consisted of 89 respondents with a high level of job satisfaction (> 3.4), and the other of 91 respondents with a low level of job satisfaction (< 3.4).

Multiple regression analysis was used to analyze the data from the two groups separately. Tables VII and VIII show the multiple regression output for respondents with high and low levels of job satisfaction. The R (.499) and R^2 (.249) in the high job satisfaction model were lower than the R (.590) and R^2 (.348) in the low job satisfaction model. Weekly working hours in the low job satisfaction situation had a significance level below 0.01 (.002). Although weekly working hours in the high job satisfaction situation had a significance level above 0.01 (0.16), it was below 0.05. The standardized coefficient (Beta) can be used to compare the effects of working hours in the low job satisfaction situation with those in the high job satisfaction situation. Because the Beta for weekly working hours in the low satisfaction situation (.281) is greater than that in the high satisfaction situation (.237), it appears that the effects of working hours in low job satisfaction situations are stronger than those in high job satisfaction situations. Despite the weaker effects of weekly working hours in the high job satisfaction situation and the weak correlation between weekly working hours and work stress, our results seem not to support those of Van der Hulst and Geurts (2001).

Table VII: Multiple regression output – high job satisfaction

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.499	.249	.232	.402008

a-Predictors: (Constant), Job satisfaction, Weekly working hours

Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.647	.617		7.527	.000
Weekly working hours	.08243	.033	.237	2.468	.016
Job satisfaction	-.581	.145	-.387	-4.021	.000

a-Dependent Variable: Work stress

Table VIII: Multiple regression output – low job satisfaction

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.590	.348	.333	.421

a-Predictors: (Constant), Job satisfaction, Weekly working hours

Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.154	.248		16.748	.000
Weekly working hours	.103	.031	.281	3.263	.002
Job satisfaction	-.465	.079	-.505	-5.853	.000

a-Dependent Variable: Work stress

In conclusion, the results suggest that employees who work longer hours may suffer from greater levels of work stress, regardless of whether they are in high or low reward situations. However, the effects of long working hours may be weaker in high reward situations than they are in low reward situations.

Recommendations

Legislation restricting the number of working hours

Caritas Hong Kong (2001) studied how long working hours affect physiological and psychological health, family life, social activities, work performance, and study and recommended that the Hong Kong government implement legislation to restrict the number of working hours. Although Hong Kong has a well-developed economy, it is unlike other Asian countries such as China that have maximum allowable daily

and weekly working hours (Article 36 of the PRC Labor law and Decree No. 178 of the State Council dated March 25, 1995). According to the Caritas recommendations, it is necessary to restrict the maximum number of daily working hours to improve the psychological health and family lives of employees. However, their recommendations are too restrictive, as restrictions on the number of working hours may produce negative outcomes.

In Korea, a reduction in the number of legal working hours between 1970 and 1999 had a negative effect on short-run production in the manufacturing industry in spite of an increase in the number of employees (Back & Oh, 2003). Also, a reduction in the number of legal working hours in France in 1998 caused worker dissatisfaction (Heintz, 2003), as the employees thought they could work more. In Hong Kong, a reduction in the number of legal working hours may mean that merchandising staff are unable to respond quickly to the needs of customers in the West, which would strongly affect the competitiveness of Hong Kong's textile and clothing merchandising industries. In fact, a well-designed and comprehensive policy can be developed to overcome the negative effects of too many working hours. Figart and Golden (2000, p. 13) advise that "a comprehensive policy could lower both the hours demanded by employers and the paid work hours deemed necessary by workers to maintain a rising standard of living." Therefore, further research should be carried out to formulate a comprehensive policy rather than to simply implement restrictions in the number of legal working hours.

Different policies for the reduction of work stress in merchandising staff

Different from the results of research in non-merchandising industries (Van der Hulst and Geurts, 2001; Oppenheim, 1987), the results of this research suggest that merchandising staff who work longer hours may suffer from greater levels of work stress, even when they have high levels of job satisfaction. On the one hand, this indicates that policies for the reduction of work stress among staff in Western industries may not be thoroughly suitable for merchandising staff in Hong Kong. On the other hand, it suggests that increases in job satisfaction alone may not successfully compensate for the heavy work stress that is caused by long working hours. An investigation of the reasons to work overtime, especially the reasons for Hong Kong merchandising staff to work overtime, may produce a better understanding of the mediating factors.

Previous research (Van der Hulst and Geurts, 2001) has found that external pressure is also a predictor of work stress. Greater external pressure to work overtime leads to greater work stress. However, external pressure to work overtime is only one reason to work overtime. Other reasons include the attainment of more rewards, the pressure of a heavy workload, and others. Thus, the willingness to work overtime should be taken into account in future studies. If employees are more willing to work overtime, then lower levels of work stress can be expected. Also, a reliable and valid scale should be developed to measure this willingness.

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Conducting in-depth interviews with merchandising staff

In this project, the influence of working hours on work stress has been successfully identified in samples from Hong Kong's merchandising industries. In-depth interviews are recommended for the further exploration of the following issues.

1. The reasons for overtime: for example, external pressure to work overtime, more job achievements, etc.
2. The influence of long working hours on the personal lives of employees.
3. The workplace atmosphere during overtime hours compared with that during normal working hours.
4. Overtime patterns: for example, frequent work on rest-days or long hours on a daily basis.

An exploration of these issues may lead to a deeper understanding of the way in which working hours affect the work stress levels of merchandising staff. For example, employees who work long hours may suffer different levels of work stress because of different personalities, different personal lives, and different work environments.

Standardized work stress scale

Many researchers (e.g., Schmitt, Colligan, & Fitzgerald, 1980; Daniels & Guppy, 1995; Lingnan University, 2001) have investigated the link between long working hours and work stress. Except for the studies conducted by Van der Hulst and Geurts (2001) and Oppenheim (1987), all of these studies found that long working hours result in higher levels of work stress. However, these researchers used different work stress scales to measure work stress, which makes a comparison across occupations more difficult or even impossible. Such a comparison would indicate which occupations have the highest levels of work stress. This is essential because work stress per unit hour can reflect the role of other mediating factors. For example, if an occupation generally features a low level of work stress, then even a moderate level of job satisfaction may render the influence of long working hours insignificant. Comparative studies would thus allow researchers to gain a more complete understanding of the mechanisms behind the influence of long working hours. Of course, different occupations have different working environments. Therefore, a scale that is suitable for one occupation may not suit another. In future studies, researchers should consider this problem carefully.

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