

## **The Link between Job Satisfaction and Social Support among Healthy Female Part-time Employees: A Cross- sectional Survey**

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### **Abstract**

Although workplace social support has been reported to be beneficial against work-related stresses, little is known about its contribution to job satisfaction. The purpose of this study was to clarify the relationship between job satisfaction and different sources of social support, as well as the interaction of job strain and social supports. Participants were 131 healthy female part-time employees in a retail service company. Participants answered to a self-administered questionnaire consisted of job satisfaction, age groups, educational levels, co-morbid disorders, self-rated health, alcohol consumption, smoking habits, health checkups, social supports, job strain, working hours and commuting time. Job satisfaction was evaluated by the Japanese version of the National Institute for Occupational Safety and Health Generic Job Stress Questionnaire, and social support and job strain were assessed by the Brief Job Stress Questionnaire. Multiple linear regression analysis controlling for confounders revealed that social support from supervisor ( $\beta=0.210$ ,  $p=0.012$ ) and co-workers ( $\beta=0.200$ ,  $p=0.012$ ), respectively, had significant independent association with job satisfaction, while no significant interactive effects of social supports x job strain were found. We conclude that both supervisor and co-worker supports are equally important to increase job satisfaction despite different levels of job strain among female part-time employees.

**Keywords:** Job satisfaction, Part-time employee, Social support, Job strain

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## **1 Introduction**

The recent trend in Japan labor market indicates that the rate of full-time employees is reducing while part-time employees are increasing [1]. This phenomenon can be partly explained by a long-term economic recession and drastic changes in working conditions. In accordance with this trend, part-time employees are required to manage more complex tasks/jobs and are highly expected to work continuously especially in those working for retail and service sectors [2]. Such changes in working conditions are considered to be a source of increased anxiety, distress and stress among part-time employees [3, 4].

Past studies have reported that employees' negative feelings about their jobs are determinants of job dissatisfaction [5, 6]. Job dissatisfaction has also been reported to predict turnover of employees [5], suggesting that the level of job satisfaction may serve as an early detector of turnover. Therefore, it is important to know the relevant psychosocial factors of job satisfaction to constitute better working conditions.

However job satisfaction and the relevant psychosocial factors are measured with participants' feeling which is influenced by conditions and characteristics of the work (pay, job security, promotion opportunities, skill variety, relationships with co-workers and supervisors, task identity, task significance, autonomy and feedback). For example, monotonous work, minimal training, low compensation and low promotion opportunities may lead to poor work attitudes, consequently causing job dissatisfaction [7]. Therefore, it is preferable to analyze the relevant factors of job satisfaction taking background and characteristics of employees into consideration.

According to the white paper of part-time employees in Japan, i.e., "Part-time Hakusho", the major reason for leaving their job is from poor human relationships at the workplace. Balancing salary and welfare system is often difficult under serious economic conditions, but building better human relationship at the workplace could be more cost-effective [2]. Therefore in order to manage personnel at the company which is mainly consisted of female part-time employees, the purpose of this paper is to clarify the relationship between job satisfaction and support from co-workers and supervisors, and the interactive effects of social supports and job strain.

## **2 Subjects and Methods**

We conducted this study as a part of an annual investigation to make the use of business management in a retail service company during January 2013. A self-administered questionnaire including purpose, instruction, and informed consent was distributed to 215 employees. The company makes/sells meats and dishes at 22 branch stores. Each store consists of one or two managers and from four to twenty-two part-time employees who worked under no specific period for employment. Those who participated in this survey were 189 (participation rate 87.9%). In this study, we selected only female part-time employees because our focus was to investigate the association of job satisfaction and social support in female part-time employees consisting majority (72.0%) of the study subjects.

Among them, five part-time employees were excluded because of missing data in essential parameters, which resulted in 131 participants. The Ethics Committee of University of Occupational and Environmental Health, Japan approved this research enforcement.

Job satisfaction was assessed by a four item scale included in the Japanese version of Generic Job Stress Questionnaire (GJSQ) developed by the US National Institute for

Occupational Safety and Health (NIOSH). Items for the scale are as follows [8, 9]:

1) Knowing what you know now, if you had to decide all over again whether to take the type of job you now have, what would you decide? I would...

(1) Decide definitely not to take this type of job, (2) Have some second thought, (3) Decide without hesitation to take the same job

2) If you were free right now to go into any type of job you wanted, what would your choice be? I would ...

(1) Not want to work, (2) Take a different job, (3) Take the same job

3) If a friend of yours told you he/she was interested in working in a job like yours, what would you tell him/her? I would...

(1) Advise against it, (2) Have doubts about recommending it, (3) Strongly recommend it

4) All in all, how satisfied would you say you are with your job?

(1) Not at all satisfied, (2) Not too satisfied, (3) Somewhat satisfied, (4) Very satisfied

Each item response number corresponds to its item score. Job satisfaction was calculated by adding scores of four items (positively-oriented). The Cronbach's alpha for this scale was acceptable ( $\alpha=0.73$ ).

The following relevant factors of job satisfaction were asked; age groups, educational levels, co-worker support, supervisor support, job strain, working hours and commuting time. Co-worker and supervisor support were consisted of three items respectively. Job strain was calculated as the ratio of total workload divided by job control. Total workload was calculated by adding scores with qualitative workload (three items), quantitative workload (three items) and physical workload (single item). These were evaluated by the Brief Job Stress Questionnaire (BJSQ) [10]. Although original questionnaire was four-point scale, we used five-point scale because of appropriateness for this study participants [11]. Items are rated on a five-point scale ranging from one (very little) to five (very much).

GJSQ and BJSQ have been well-established means of measurements [10, 12, 13], and Cronbach's alphas for those scales were acceptable (Table 1). Job strain was negatively-oriented, while other scales were positively-oriented.

Moreover, we asked following items as participants' characteristics; co-morbid disorders, self-rated health, alcohol consumption, cigarettes smoked, health checkups. Self-rated health was determined by a single question: How do you describe your health during the past 1-year period? Response options were: (1) very poor, (2) poor, (3) neither poor nor bad, (4) quiet good, (5) very good [14]. Alcohol consumption was estimated by asking the usual amount of alcoholic drinks consumed per day and the number of occasions in a week that alcoholic drinks were consumed.

If missing values were less than 10% of the participants, it was replaced by median value in case of ordinal variables, and average value for continuous variables. Because missing values for employment years were 19.1%, we have removed this variable from the analyses. Educational levels, co-morbid disorders and health checkups were treated as categorical variables while the remaining variables were treated as continuous variables. The relationship between job satisfaction and educational levels was tested by one-way analysis of variance (One-way ANOVA), while correlations were tested by the Pearson product-moment correlation coefficient. Multivariable linear regression analysis was used to test the main and interactive effects of job strain with co-worker support and supervisor support on job satisfaction adjusting for selected covariates (age groups, working hours). The adjusted covariates were selected based on the initial findings which showed marginal associations ( $p<0.10$ ) with job satisfaction (Table 2). To examine the association of job satisfaction with co-worker support and supervisor support, we utilized moderated regression procedures in

which main effects variables were centered [15]. In the analysis, we entered the main effects of job strain, covariates, co-worker support or supervisor support, and cross-products of co-worker support x job strain (step 4) or supervisor support x job strain (step 6). The significance level for statistical analyses was  $p < 0.05$  (two-tailed test). We analyzed the data using IBM SPSS Statistics 22.0 software (SPSS Inc, Chicago, Illinois).

Table 1: Characteristics of study participants (n=131)

Characteristics	n (%) or mean±SD	Cronbach's alpha
<i>Occupational factors:</i>		
Job satisfaction (possible range: 4-13)	9.23(1.82)	0.73
Co-worker support (possible range: 3-15)	10.4±3.6	0.74
Supervisor support (possible range: 3-15)	9.2±2.9	0.84
Total workload (possible range: 7-35) <sup>a,b</sup>	22.2±4.9	0.80
Job control (possible range: 3-15)	9.3±2.5	0.74
Job strain <sup>b,c</sup>	2.63±1.27	
Working hours (per week)	25.1±10.6	
Commuting time (min/one-way/day)	24.6±16.8	
<i>Demographic factors:</i>		
Age groups (years)		
Less than 20	10(7.6)	
20-29	9(6.9)	
30-39	18(13.7)	
40-49	21(16.0)	
50-59	22(16.8)	
60-69	47(35.9)	
70 and more	4(3.1)	
Educational levels		
Junior high school	28(21.4)	
High school	93(71.0)	
Junior college or college or higher	10(7.6)	
<i>Health conditions:</i>		
Co-morbid disorders (yes)	28(21.4)	
Self-rated health		
Very poor	4(3.1)	
Poor	18(13.7)	
Neither good nor bad	47(35.9)	
Quite good	44(33.6)	
Very good	18(13.7)	
<i>Lifestyle factors:</i>		
Alcohol consumption(units/week)	3.5±7.5	
Current smoker	30(22.9)	
Number of cigarettes smoked among smokers	13.0±6.4	
Health checkups in the last year (yes)	84(64.1)	

<sup>a</sup> Total workload was calculated by the sum of quantitative workload, qualitative workload, and physical workload.

<sup>b</sup> Negatively-oriented.

<sup>c</sup> Job strain was calculated by total workload divided by job control.

SD: Standard Deviation.

### 3 Results

Characteristics of the study participants are shown Table 1. Overall, 55.8% of participants were 50 years or older. Average job satisfaction score for the participants was 9.23 (ranged 5 to 13).

The result of simple correlations is shown in Table 2. The relevant factors which had significant intercorrelations with job satisfaction were age groups ( $r=0.193$ ,  $p=0.027$ ), job strain ( $r=-0.386$ ,  $p<0.001$ ), co-worker support ( $r=0.218$ ,  $p=0.012$ ), supervisor support ( $r=0.319$ ,  $p<0.001$ ) and working hours ( $r=-0.15$ ,  $p=0.087$ ) (Table 2); educational levels were not related to job satisfaction (One-way ANOVA,  $F=0.039$ ,  $p=0.962$ ).

The results of multivariable linear regression analyses are shown in Table 3. The analyses showed statistically significant relationships between job satisfaction and job strain (inverse relation), age groups, co-worker support and supervisor support, while no significant interactive effects of social supports x job strain were found between job satisfaction and co-worker support and supervisor support.

Table 2: Pearson's correlation matrix for selected variables (n=131)

Variables	1	2	3	4	5	6
1 Job satisfaction	—					
2 Age groups	.193**	—				
3 Job strain <sup>a</sup>	-.386**	.002	—			
4 Co-worker support (3-15)	.218**	.021	-.026	—		
5 Supervisor support	.319**	-.013	-.328**	.403**	—	
6 Working hours (per week)	-.150*	-.060	.096	-.050	-.113	—
7 Commuting time(min/one-way/day)	.047	-.124	-.020	-.029	.005	-.112

\* $p<0.10$ , \*\* $p<0.05$

<sup>a</sup>Negatively-oriented.

Table 3. Multivariable linear regression analysis for the association between job satisfaction (dependent variable) and social supports controlling for covariates (n=131)

	Step 1		Step 2		Step 3	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Job satisfaction						
<i>Adjusted R<sup>2</sup> (p)</i>	<b>0.143</b>	<b>&lt;0.001</b>	<b>0.178</b>	<b>&lt;0.001</b>	<b>0.212</b>	<b>&lt;0.001</b>
<i>R<sup>2</sup> change</i>			0.048		0.040	
<i>F change</i>			10.384		10.767	
<i>Significance of F change</i>			<b>&lt;0.001</b>		<b>&lt;0.001</b>	
Independent variables						
Job strain <sup>a</sup>	<b>-0.386</b>	<b>&lt;0.001</b>	<b>-0.377</b>	<b>&lt;0.001</b>	<b>-0.372</b>	<b>&lt;0.001</b>
Age groups			<b>0.187</b>	<b>0.020</b>	<b>0.183</b>	<b>0.020</b>
Working hours (per week)			-0.103	0.202	-0.093	0.236
Co-worker support					<b>0.200</b>	<b>0.012</b>
Co-worker support x Job strain <sup>a</sup>						
Supervisor support						
Supervisor support x Job strain <sup>a</sup>						
	Step 4		Step 5		Step 6	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Job satisfaction						
<i>Adjusted R<sup>2</sup> (p)</i>	<b>0.211</b>	<b>&lt;0.001</b>	<b>0.212</b>	<b>&lt;0.001</b>	<b>0.214</b>	<b>&lt;0.001</b>
<i>R<sup>2</sup> change</i>	0.044		0.039		0.008	
<i>F change</i>	7.941		9.729		8.099	
<i>Significance of F change</i>	<b>&lt;0.001</b>		<b>&lt;0.001</b>		<b>&lt;0.001</b>	
Independent variables						
Job strain <sup>a</sup>	<b>-0.366</b>	<b>&lt;0.001</b>	<b>-0.309</b>	<b>&lt;0.001</b>	<b>-0.383</b>	<b>&lt;0.001</b>
Age groups	<b>0.181</b>	<b>0.022</b>	<b>0.191</b>	<b>0.016</b>	<b>0.189</b>	<b>0.017</b>
Working hours (per week)	-0.094	0.234	-0.085	0.281	-0.098	0.220
Co-worker support	<b>0.275</b>	<b>0.021</b>				
Co-worker support x Job strain <sup>a</sup>	-0.100	0.397				
Supervisor support			<b>0.210</b>	<b>0.012</b>	<b>0.236</b>	<b>0.007</b>
Supervisor support x Job strain <sup>a</sup>					-0.128	0.232

Job strain, co-worker support and supervisor support were centralized in step 4 and step 6

Bold letters: *p* < 0.05

$\beta$ : Standard partial regression coefficient.

## 4 Discussion

There were three major findings from this study. First, supervisor and co-worker supports were significantly and positively associated with job satisfaction with close beta values, suggesting that both of these supports are equally important to increase job satisfaction. Second, there were no significant interactive effects of job strain x social support on job satisfaction showing that workplace social supports have a direct impact on job satisfaction. Third, job strain was the strongest factor reducing job satisfaction. From the above results, concrete measures to increase support from co-workers and supervisors as well as reducing job strain are necessary to increase job satisfaction among female part-time employees. In the current study, the mean score for job satisfaction was 9.23 (Table 1). This figure is higher than those reported in a study of 1,940 blue-collar male employees (mean 8.10) and

721 female employees at manufacturing companies (mean 8.00) [9,16], but is slightly lower than those of 307 white-collar employees (mean 9.50) [17] and 141 white-collar female employees (mean 9.30) [18]. These figures suggest that job satisfaction score among female part-time employees in this study is comparable to past studies. Contrary to our expectation, the job satisfaction score among female part-time employees was not necessarily low but this does not preclude the importance of improving job satisfaction among part-time employees.

The current study may provide further implications for strategies to increase job satisfaction and reduce turnover among female part-time employees. As suggested by the results, smoother communication through co-workers and supervisor seems to be the key factor contributing to job satisfaction. Based on this fact, employee training focused on human relationship may be helpful to improve job satisfaction and work environment [19].

This study has strengths and limitations that should be considered in the interpretation of the results. The study used well established measures of job satisfaction and social supports controlling for potential confounders in a relatively homogenous sample. Furthermore, part-time employees are often 'hard to reach' and 'understudied' population that has often been neglected in occupational health research. Limitations are as follows. First, this study was conducted in a single company with a small sample size, which makes it difficult to generalize the results. However this study uncovered one of the true reasons that part-time employees tend not to tell why they leave their job, i.e., poor human relationship [2]. This finding may be helpful in building an effective management system. Second, we did not collect data on facets of job satisfaction that capture specific dimensions of job satisfaction. Third, the study was cross-sectional in nature; thus no causal interpretations can be made. Finally, although we adjusted for a variety of confounders, we could not exclude the possibility that unadjusted factors, i.e., personality traits, other work-related factors, and concurrent life stressors such as marital discord, work-family conflict, interpersonal difficulties outside work, financial difficulties, as well as unknown third factor(s) which could affect both the dependent and independent variables, which may explain the present findings.

## **5 Conclusion**

This study suggested that supervisor support and co-worker support are equally important to constitute high job satisfaction regardless of the level of job strain in female part-time employees.

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## References

- [1] Ministry of labor, health and welfare, General survey on part-time workers 2011, <http://www.mhlw.go.jp/toukei/list/132-23b.html> (in Japanese)
- [2] AIDEM Inc, Part-time white paper 2009, [http://apj.aidem.co.jp/cgi/?c=data\\_examine\\_zoom&pk=47](http://apj.aidem.co.jp/cgi/?c=data_examine_zoom&pk=47) (in Japanese)
- [3] Ministry of labor, health and welfare, Survey on State of Employees' Health 2007, <http://www.mhlw.go.jp/toukei/itiran/roudou/saigai/anzen/kenkou07/index.html> (in Japanese)
- [4] Ministry of labor, health and welfare, Survey on State of Employees' Health 2012, <http://www.mhlw.go.jp/toukei/list/h24-46-50.html> (in Japanese)
- [5] P.E. Spector, *Job satisfaction: application, assessment, causes, and consequences*, Sage, California, 1997.
- [6] E.B Faragher, M Cass, C.L Cooper, The relationship between job satisfaction and health: a meta-analysis, *Occup Environ Med*, 62(2), (2005), 105-112.
- [7] S.K. Giannikis, D.M. Mihail, Modelling job satisfaction in low-level jobs: Differences between full-time and part-time employees in the Greek retail sector, *European Management Journal*, 29(2), (2011), 129-143.
- [8] T. Haratani, The stress measured the National Institute for Occupational Safety and Health (NIOSH) Generic Job Stress Questionnaire (GJSQ), *J Occup Health*, 40(2), (1998), A31-32. (in Japanese)
- [9] A. Nakata, M. Takahashi, T. Ikeda, T. Haratani, M. Hojou, S. Araki, Perceived job stress and sleep-related breathing disturbance in Japanese male workers, *Social Science & Medicine*, 64(12), (2007), 2520–2532.
- [10] T. Shimomitsu, H. Ohno, T. Maruta, T. Tanigawa, Investigation research report concerning prevention of disease related to work in 1997 the Ministry of Labor: III Stress measurement research group report, (2000), 101–169. (In Japanese)
- [11] K. Oda, A psychological study on the Japanese qualitative and quantitative words, *Japanese Association of Educational Psychology*, 18(3), (1970), 166-176.
- [12] T. Haratani, N. Kawakami, S. Araki, Reliability and validity of the Japanese version of NIOSH Generic Job Stress Questionnaire, *Jpn J Ind Health*, 35(suppl.), (1993), S214. (in Japanese)
- [13] A. Nakata, T. Haratani, M. Takahashi, N. Kawakami, H. Arito, F. Kobayashi and S. Araki, Job stress, social support, and prevalence of insomnia in a population of Japanese daytime workers, *Social Science & Medicine*, 59(8), (2004), 1719-1730.
- [14] A. Nakata, Investigating the associations between work hours, sleep status, and self-reported health among full-time employees, *Int J Public Health*, 57(2), (2012), 403-411.
- [15] L.S. Aiken, S.G. West, *Multiple regression: testing and interpreting interventions*, Sage, Newbury Park, 1991.
- [16] A. Nakata, T. Ikeda, M. Takahashi, T. Haratani, M. Hojou, Y. Fujioka, N.G. Swanson, A. Arai, Impact of psychosocial job stress on non-fatal occupational injuries in small and medium-sized manufacturing enterprises, *American Journal of Industrial Medicine*, 49(8), (2006), 658-669.
- [17] A. Nakata, M. Takahashi, M. Irie, T. Ray, N.G. Swanson, Job satisfaction, common cold, and sickness absence among white-collar employees: a cross-sectional survey, *Ind Health*, 49(2), (2011), 116-121.



- [18] A. Nakata, M. Takahashi, M. Irie, A.G. Swanson, Job satisfaction is associated with elevated natural killer cell immunity among healthy white-collar employees, *Brain, Behavior, and Immunity*, 24(8), (2010), 1268-1275.
- [19] N. Kawakami, Y. Kobayashi, S. Takao, A. Tsutsumi, Effects of web-based supervisor training on supervisor support and psychological distress among workers: a randomized controlled trial, *preventive Medicine*, 41(2), (2005), 471-478.