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#### Citation

LEE, Seulki, YUN, Taesik, & LEE, Soo-Young.(2015). Moderating role of social support in the stressor-satisfaction relationship: Evidence from police officers in Korea. *International Review of Public Administration*, 20(1), 102-116.

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## Moderating role of social support in the stressor-satisfaction relationship: evidence from police officers in Korea

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*(Received 24 July 2014; final version received 21 October 2014)*

The purpose of this study is to find out the relationship between job stress and job satisfaction, and analyze the effect of social support on this relationship. In particular, this study analyzes the effects of three types of job stress – role overload, role ambiguity and bad physical environment – and two sources of social support – supervisor and coworker support. Regression analysis was performed using data from a survey of 619 police officers in Korea. The findings from the analysis are as follows. First, role ambiguity and bad physical environment are negatively related to job satisfaction. Second, social support has a direct effect on job satisfaction but has no moderating effect. Third, coworker support is more effective in enhancing job satisfaction than supervisor support.

**Keywords:** job stress; social support; job satisfaction; police officers

### Introduction

Public sector organizations have experienced many administrative reforms and drastic environmental changes in recent years. With the widespread adoption of new public management (NPM), managerial reforms emphasizing customer orientation, performance improvement, external accountability and cost containment have been launched all over the world (Noblet & Rodwell, 2009). Such reforms expose public employees to more pressure and burdens for enhancing the efficiency and effectiveness of public organizations. In addition, NPM reforms are intended to reduce the job security of public employees, to save costs and create an atmosphere of competition for performance among employees (Oh & Park 2011; K. Yang & Kassekert, 2010). Considering these changes and reforms, it is not surprising that employees in public organizations experience severe job-related stress. That is, as Korunka, Scharitzer, Carayon, and Sainfort (2003) pointed out, the more structural, procedural, cultural and technological changes associated with NPM, the higher job stress of the public employees.

Although all stress is not necessarily harmful,<sup>1</sup> a considerable or excessive level of job stress can lead to such negative outcomes as turnover for an organization and health problems for an employee. More specifically, job stress negatively influences an employee's job satisfaction and well-being (Noblet & Rodwell, 2009), organizational commitment (Mikkelsen, Ogaard, & Lovrich, 2000) and job performance (Beehr, Jex, Stacy, & Murray, 2000). These studies imply that job stress can result in substantial

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costs for the organization and eventually affect the overall efficiency and effectiveness of the agency. According to the International Labor Organization (ILO), possible inefficiencies of occupational stress may cost up to 10% of a nation's gross national product (GNP) (Le Fevre, Matheny, & Kolt, 2003).

Public and private organizations have attempted to reduce their employees' stress due to these detrimental effects. Yet, despite the pervasiveness and seriousness of job stress, few empirical studies have been conducted to investigate how to moderate the harmful influences of job stress (Beehr, Johnson, & Nieva, 1995). Moderating variables (e.g., recreational activities, self-care, social support, etc.) that can alter the negative effects of job stress can be labeled 'coping resources' (Osipow & Spokane, 1984). Among various coping resources, social support has been an important moderating variable of theory and research about job stress (Beehr, King, & King, 1990, p. 62). While a number of psychology and business scholars (e.g., Beehr, 1985; Cohen & Wills, 1985) have focused on the moderating effects of social support in the context of job stress, scholars in the field of public administration and public personnel management have paid little attention to the role of social support. The detailed effect of social support in the public sector should be scrutinized because the potential benefit of social support as a moderating variable for job stress can be fully used only after its effect is identified (Ganster, Fusilier, & Mayes, 1986).

This paper investigates the effect of job stress in public organizations on employees' job satisfaction and examines the role of social support in the relationship between them. We use job satisfaction as an outcome of job stress because it is one of the most important workplace attitudes (K. Yang & Kassekert, 2010). At the individual level, job satisfaction is closely related to employees' well-being and mental health; at the organization level, it contributes to improving performance and productivity and to reducing costs from negative organizational behaviors including turnover, burnout and absenteeism (Jung, 2014; Wright & Davis, 2003; K. Yang & Kassekert, 2010; S.-B. Yang & Lee 2009). Thus, we can provide practical implications to build healthier and more effective organizations by clarifying the role of social support in the relationship between job stress and job satisfaction. In addition, this research focuses on the job stress and job satisfaction of police officers in Korea, as such street-level bureaucrats usually have high stress due to face-to-face, and often emotional, encounters with citizens (Choi, 2011; Hsieh, *forthcoming*; Pugliesi, 1999), and police work is a well-known high-stress occupation due to the dangerous and tough nature of the job (Tang & Hammontree, 1992).

This study proceeds as follows. In the next section, we offer our specification of a model for the analysis through a theoretical review of the literature. Then, we test the model using data from a survey of 619 police officers in Korea, followed by the analysis of our findings. Finally, we conclude this paper with a discussion of policy implications.

## **Theory**

### ***Linking job stress with job satisfaction***

Stress indicates physical and emotional reaction to potentially threatening aspects of the environment (Selye, 1964). In particular, job stress refers to a situation where job-related variables interact with an employee to change his (her) psychological condition so significantly that the person is forced to deviate from normal working (Beehr & Newman, 1978, p. 670). According to the person–environment fit approach, employees

experience job stress when they have a poor fit with their environment (Eulberg, Weekley, & Bhagat, 1988). In other words, those under serious job stress are the people who cannot properly respond to environmental stimuli or demands, suffering psychological and physiological damage. Research on job stress in the field of psychology (e.g., Beehr et al., 2000; Ganster et al., 1986; Kaufman & Beehr, 1981) has mostly paid attention to the psychological outcomes of job stress such as anxiety, worry, depression and low job satisfaction, which have been called strains<sup>2</sup> (Hunter & Thatcher, 2007). In contrast, the physiological literature (e.g., Jing, Sheng, Jun-Quan, & Wei, 2007; Schmieder & Smith, 1996) has examined strains of job stress such as heart disease and blood pressure. This stream of research interest is described as the 'stress-strain relationship.' Researchers in the field of public administration and public management have also focused on low job satisfaction, weak organizational commitment and job withdrawal behavior among strains (Dunseath, Beehr, & King, 1995; Noblet, McWilliams, & Rodwell, 2006), but few studies have addressed this stress-strain relationship issue.

Among the many strains, this study focuses on public employees' job satisfaction because it is an organizationally important and valued outcome, and most of the research on job stress has concentrated on its relationship with job satisfaction (Sullivan & Bhagat, 1992, p. 354). Job satisfaction refers to a positive or optimistic emotional situation resulting from the appraisal of one's job or job experience (Locke, 1976, p. 1300). It represents an interaction between employees and their work environments by perceiving that an employee's job actually provides what he or she wants from their job (Wright & Davis, 2003, p. 70). With respect to the effects of job stress on job satisfaction, most studies indicate that job stress and satisfaction are inversely related (Mikkelsen et al., 2000; Noblet & Rodwell, 2009; Sullivan & Bhagat, 1992).

Job stress has a variety of sources, which scholars call stressors. For example, Steers and Black (1994) identify stressors as follows: role ambiguity, role conflict, role overload, unrealistic expectations, difficult decisions, managerial failure and subordinate failure. Schultz and Schultz (2006) also divide stressors into work overload, work underload, organizational change, role conflict and role ambiguity. Drory and Shamir's (1988) categorization of stressors includes intraorganizational factors (e.g., role conflict, role ambiguity, management support), extraorganizational factors (e.g., community support, family-role conflict) and task characteristics. Various sources of job stress depend on the employee and the organizational environment, and each job stressor can have a different influence on job satisfaction. Thus, research examining the relative effects of different job stressors is of considerable importance.

A number of scholars, such as Ok and Kim (2001) and Park (2008), have analyzed the relative effects of different sources of job stress on job satisfaction. This paper also examines the relative effects of different job stressors on job satisfaction; however, unlike other studies, our research target is police officers in Korea. Among the various stressors, this paper focuses on employees' role overload, role ambiguity and bad physical environment. Role overload (e.g., Buck, 1972) and role ambiguity (e.g., Parasuraman & Alutto, 1981) are the most commonly researched job stressors (Beehr et al., 2000), and bad physical environments such as unpleasant working conditions and excessive hours (e.g., Kornhauser, 1965) reflect the nature of public organizations, which means their work environments are generally worse than those of other business organizations (Kim, Gu, & Yoon, 2002).

### *Role overload*

Role overload describes situations in which individuals feel they have too many responsibilities or duties expected of them given the time available, their capabilities and other restrictions (Eatough, Chang, Miloslavich, & Johnson, 2011, p. 620). Researchers have identified two types of role overload: quantitative role overload and qualitative role overload (Gibson, Ivancevich, & Konopaske, 2006; Ok & Kim, 2001). Quantitative role overload implies having more work than time permits (Steers & Black, 1994, p. 597). The amount of time for working is limited; thus, employees experience role overload when they have insufficient time to accomplish their work. In contrast, qualitative role overload involves work that is too difficult to perform (Steers & Black, 1994, p. 597). That is, qualitative role overload arises when the work goes beyond one's knowledge, skills and abilities. Empirical evidence (e.g., Nele & Hans, 2006) shows that too much work, both in quality and in quantity, is related to low job satisfaction. In this vein, we expect the following:

*H1: Role overload is negatively associated with job satisfaction.*

### *Role ambiguity*

Role ambiguity refers to vague and unclear expectations set for employees, such that employees are uncertain as to what is expected of them (Eatough et al., 2011, p. 620). In other words, role ambiguity indicates uncertainty that arises when individuals have inadequate information concerning their roles (Katz & Kahn, 1978). Job-related information includes performance expectations, goals, assignments, authority, responsibilities, job duties and other job conditions (Yun, Takeuchi, & Liu, 2007, p. 746). Role theory hypothesizes that role ambiguity is negatively related to job satisfaction (Schuler, 1975, p. 683), and previous studies (e.g. Bedeian & Armenakis, 1981; Glisson & Durick, 1988) have found empirical evidence for this negative effect of role ambiguity on job satisfaction. Also, Daley (1986), Hassan (2013) and Wright and Davis (2003) argue that employees' job satisfaction increases when they understand more clearly what is expected of them in their jobs. Based on this rationale, we hypothesize the following:

*H2: Role ambiguity is negatively associated with job satisfaction.*

### *Bad physical environment*

The well-known Hawthorne studies were conducted to examine the effects of physical environments on employees' efficiency, although they found that socio-psychological factors are more important than physical conditions (Jung & Lee, forthcoming). The field of organizational behavior can still benefit from studying physical condition factors in that they can be sources of pressures that negatively affect employees' well-being (Sutton & Rafaeli, 1987, p. 260). That is, when employees work in dangerous conditions or unfavorable environments, they can easily get job stress. Schultz & Shultz (2006) present extreme temperature, poor lighting, shift work and indoor pollution as the examples of physical environment that cause job stress in a narrow sense. In addition, Smith and Sainfort (1989) define a physical environment that causes job stress with three examples: noise, air quality and housekeeping, and environmental conditions that cause sensory disruption and make it more difficult to carry out work. The last one

(i.e., environmental conditions) represents physical environment in a broad sense. In addition, Blau (1981) measured job stressors by including measures of physical danger. Based on these previous studies, we used physical environment as a job stressor in a broad sense. Kim et al. (2002) demonstrated that physical environments are one of the most critical job stressors for police officers, emphasizing the noise problem. Empirical studies reveal that pleasant physical surroundings enhance the job satisfaction of private- and public-sector employees (DeSantis & Durst, 1996; Vinokur-Kaplan, Jayaratne, & Chess, 1994). We therefore propose the following hypothesis:

*H3: Bad physical environments are negatively associated with job satisfaction.*

### **Role of social support**

As job stress is increasingly recognized as an unavoidable harmful factor in the workplace, reducing negative effects of stress is an important issue for practitioners and researchers. A number of researchers such as Beehr (1985) and Cohen and Wills (1985) have proposed that social support can reduce or mitigate the impacts of stressors on employees. Social support can be conceptualized as including both the helpful activities of others and the ease of communications with others (Seers, McGee, Serey, & Braen, 1983, p. 274), and has helped employees cope with their job stress (House, 1981). Sources of social support can be categorized either as primary or secondary sources according to the degree of intimacy that a person has with these sources (Beehr, 1985, p. 377). Primary sources of social support involve family and friends, while secondary sources are those with whom a person has less intimate relationships, such as supervisor, coworker and counselor. Among the primary and secondary sources, most of the research studies have addressed social support from secondary sources (i.e., supervisor and co-workers), as job stress usually occurs in the workplace (LaRocco & Jones, 1978). House (1981) also pointed out that supervisor and coworker supports are the most important and effective sources of social support at work. Accordingly, this study focuses on social support from supervisor and coworker as variables moderating the effects of job stressors on the job satisfaction of public employees.

However, scholars such as Beehr et al. (1990, p. 62) and Cohen and Wills (1985) pointed out that social support often has direct effects on strains such as low job satisfaction and, at the same time, it often interacts with job stressors to moderate their effects on strains. The former is usually called the main effect and the latter is commonly called the buffering effect<sup>3</sup> (Beehr et al., 1990). Unfortunately, only a few empirical studies have investigated this argument (i.e., main effect or buffering effect of social support) in the public sector. For example, Dunseath et al. (1995) analyzed the buffering effect of social support, but found little support for the buffering effect model. Likewise, using a national survey on Australian public officials, Noblet et al. (2006) showed that social support has a direct influence on job satisfaction and organizational commitment. On the other hand, Ok and Kim (2001) provide evidence of a moderating effect by arguing that social support interacts with job stress and buffers the relationship between stress and strain like low job satisfaction and weak organizational commitment. Based on these arguments, we intend to test both effects, since it is impossible to decide whether social support has main effects or buffering effects on employees' job satisfaction.

### *Main effect*

The main effect model holds that social support has a direct influence on the outcome of job stress. That is, it is hypothesized that social support directly affects an element in the job stress process by itself, aside from any other variable. This effect on strains appears strongest when one considers attitudinal strains such as job satisfaction, and psychological strains (Beehr, 1985, p. 391). Previous research has found social support to be directly and positively related to job satisfaction. For example, LaRocco and Jones (1978) found that supervisor and coworker supports had a positive impact on job satisfaction, and Pinneau (1975) found that social support had direct effects on strain reduction. Thus, we suggest the following hypotheses for the main effect model:

*H4: Supervisor support is positively associated with job satisfaction.*

*H5: Coworker support is positively associated with job satisfaction.*

### *Buffering effect*

In contrast, the buffering effect model argues that social support buffers the stress-strain relationship. According to this hypothesis, social support mitigates the negative effects of job stress by interacting with job stress. In other words, if employees have supportive relationships with supervisors or coworkers, they can talk about positive and negative things about their work conditions, or even non-work-related events, and, as a result, this supportive relationship can provide emotional and tangible assistance to mitigate the influence of stress (Beehr et al., 1990). For example, Murrell, Norris, and Chipley (1992) argued that when faced with high job stress, persons with strong social support would cope with the stress successfully and experience little distress, whereas those with weak social support would cope less well and experience greater distress. Some previous studies have found empirical evidence for this buffering effect of social support in the job stress–job satisfaction relationship. Beehr et al. (1990) used communications between supervisors and subordinates as part of their social support variables and found that social support mitigates the relationship between job stress and job satisfaction. That is, the impact of job stress on job satisfaction can be weakened when the level of social support is high. Ok and Kim (2001) also supported the buffering effect model, showing that social support moderates the relationship between job stress and job satisfaction by interacting with job stress. In this vein, we assume that supervisor support and coworker support moderate the relationship between job stressors (i.e., role overload, role ambiguity, and bad physical environment) and job satisfaction.

*H6: Supervisor support moderates the relationship between job stressors and job satisfaction.*

*H7: Coworker support moderates the relationship between job stressors and job satisfaction.*

## **Methodology**

### ***Data***

This study uses a survey dataset collected by Korea Management Associate Consulting in April 2011. The purpose of the survey was to measure police officers' perceptions of a variety of job-related characteristics in Korea. Also, this survey used stratified

random sampling, meaning that this sample was extracted from all parts of the country, considering ranks and regions to make it represent the population better. Of the 1004 police officers receiving the survey items, 619 police officers responded, rendering a response rate of 61%. Table 1 shows a brief demographic overview of the survey respondents. Male respondents totaled 94%, and 44% of the survey respondents were aged between 40 and 49 years. The sample consisted of a relatively even spread of employees across work experience groups classified by 5-year intervals (4 and fewer years, 5–9 years, 10–14 years, 15–19 years, 20–24 years, and 25 or more years), and the education level of the majority of respondents was a university degree (48%). Ranks ranged from police officer to senior superintendent, with the exclusion of superintendent general and above ranks.<sup>4</sup> Departments included police agency, police station, police precinct office, police box and others.

### Measures

The dependent variable of this study was the job satisfaction of the police officers in Korea. For this variable, we used the response average of the following two survey items: ‘I am satisfied with the work that I do’ and ‘My current position is well suited to my needs.’ These items were developed by Hackman and Oldham (1975) and measured with a 5-point Likert scale<sup>5</sup> (1: strongly disagree, 5: strongly agree). The Cronbach’s alpha of this variable was 0.80.

As previously mentioned, we included two groups of independent variables: job stressors (role overload, role ambiguity and bad physical environment) and social support (supervisor support and coworker support). The scales for job stressors were developed by the Korean Scale of Occupational Stress (KSOS) and the level of social support was measured using the scale developed by House (1981). For the role overload variable, we used the response average of four items: ‘The work I am in charge of is rather heavy sometimes,’ ‘I always have been pressed for time,’ ‘My workload increased remarkably’

Table 1. Demographic summary of survey respondents.

	Frequency	Percentage		Frequency	Percentage
<i>Gender</i>			<i>Education</i>		
Female	36	5.8	High school	178	28.8
Male	583	94.2	College	129	20.8
<i>Rank</i>			University	297	48.0
Police officer	1	0.1	Graduate degree	15	2.4
Senior police officer	7	1.1	<i>Age (years)</i>		
Assistant inspector	27	4.4	20~29	32	5.2
Inspector	186	30.1	30~39	166	26.8
Senior inspector	223	36.0	40~49	275	44.4
Superintendent	111	17.9	~50	146	23.6
Senior superintendent	64	10.3	<i>Work experience (years)</i>		
<i>Department</i>			0~4	80	12.9
Police agency	80	12.9	5~9	83	13.4
Police station	243	39.3	10~14	105	17.0
Police precinct office	150	24.2	15~19	123	19.9
Police box	109	17.6	20~24	118	19.0
Others	37	6.0	~25	110	17.8



and 'I was given too many things to do at one time.' The reliability coefficient of these items was 0.66. The role ambiguity variable was measured by the following three items: 'My work schedule changes unexpectedly,' 'There is no coherent direction given' and 'I was given a different task before finishing the old one.' The Cronbach's alpha for these items was 0.81. The bad physical environment variable was made by combining these five items: 'Working day and night breaks my biorhythm,' 'I have to work in an uncomfortable position all day,' 'I sometimes face dangerous situations at work,' 'I cannot get enough rest during work time' and 'Work conditions are bad in terms of facilities and training.' The reliability coefficient of the five items was 0.66. To measure supervisor support, we used a single item: 'My supervisor is cooperative for my work.' Coworker support was measured by the response average of the following three items: 'My coworkers are cooperative for my work,' 'Some of my coworkers understand my feelings and circumstances' and 'I have reliable coworkers to share a grievance.' The Cronbach's alpha for coworker support was 0.78.

Demographic characteristics may influence job satisfaction. In order to reduce the likelihood of spurious statistical impact, this study also included six dummy variables including gender, age, work experience, education, rank and department. Gender was measured as a binary variable. Age and work experience were used as interval variables, whereas education, rank and department were used as ordinal variables. Table 2 shows the descriptive statistics of the variables in the present research.

### Analysis results

Ordinary least squares multiple regression procedures were used to evaluate the effects of job stressors on job satisfaction, and the effect of social support in the relationship between job stressors and job satisfaction. The buffering hypothesis was examined with the interaction terms (i.e., job stress  $\times$  social support). This regression approach, recommended by Cohen and Wills (1985), is preferred when both predictor variables and criteria are continuous. We included six interaction terms by multiplying three types of job stress and two sources of social support. Job stressors (role overload, role ambiguity and bad physical environment) and social support (supervisor support and coworker support) were 'centered.' The purpose of the centered variables was to reduce multicollinearity in the interaction terms (Jaccard, Turrisi, & Wan, 1990).

We conducted the ordinary least squares regression to test the hypotheses, and Table 3 shows the analysis results. The F-value indicates that the model fits the data well. We also checked heteroscedasticity, normality of residuals and multicollinearity,

Table 2. Descriptive statistics and correlation coefficients of all variables.

Variable	Mean	SD	Min	Max	1	2	3	4
Job satisfaction	3.101	0.825	1.00	5.00				
1. Role overload	3.095	0.573	1.25	4.25				
2. Role ambiguity	2.707	0.531	1.00	4.00	.619**			
3. Bad physical environment	3.762	0.527	2.20	4.80	.447**	.403**		
4. Supervisor support	2.704	0.640	1.00	4.00	-.141**	-.291**	-.209**	
5. Coworker support	2.874	0.434	1.00	4.00	-.068	-.176**	-.147**	.399**

Note: Means and standard deviations (SD) for 'centered' variables were calculated prior to centering.

\*\*  $p < .01$ ; \*\*\*  $p < .001$ ;  $N = 619$ .

Table 3. Ordinary least squares regression results.

Variables	DV: job satisfaction		
	Unstandardized coefficient (B)	SE	Standardized coefficient ( $\beta$ )
<i>Job stress</i>			
Role overload	-.058	.074	-.040
Role ambiguity	-.261**	.078	-.168
Bad physical environment	-.222**	.071	-.142
<i>Social support</i>			
Supervisor support	.153**	.060	.092
Coworker support	.174**	.084	.119
<i>Interaction terms</i>			
Supervisor support * role overload	.063	.041	.094
Supervisor support * role ambiguity	.027	.039	.043
<b>Supervisor support * bad physical environment</b>	.025	.038	.033
Coworker support * role overload	-.024	.042	-.036
Coworker support * role ambiguity	-.001	.038	-.002
<b>Coworker support * bad environment</b>	-.007	.038	-.010
<i>Control variables</i>			
Gender	-.013	.138	-.004
Age	.006	.081	.006
Work experience	.064	.048	.128
Education	.104**	.038	.113
Rank	.025	.045	.033
Department 1 (Police agency)	.228	.150	.093
Department 2 (Police station)	.159	.136	.094
Department 3 (Police precinct office)	.134	.143	.070
Department 4 (Police box)	.012	.147	.006
Intercept	3.197**	.589	
Adjusted R-Square		.182	
F- value		7.889***	

Note: \*\*  $p < .01$ ; \*\*\*  $p < .001$ ;  $N = 619$ .

and found that none of these concerns were raised.<sup>6</sup> Demographic variables were entered into the regression analysis to control any confounding effects of gender, age, work experience, education, rank and department.

Two research questions guided this study. The first one concerned the relationships between job stressor variables and job satisfaction. For this question, this study assumed that job stressors would be negatively associated with job satisfaction. Role ambiguity and bad physical environment had significant and negative impacts on job satisfaction. This result supported H2 and H3. The standardized coefficient (beta) of role ambiguity was larger (in absolute value) than that of physical environment, which means that role ambiguity appears to be more critical than bad physical environment in influencing police officers' job satisfaction in Korea. Yet, contrary to our expectation, the third job stressor, role overload, did not have a statistically significant effect on the job satisfaction of the Korean police officers. Thus, H1 was rejected.

Our second research question was about the relationship between social support variables and job satisfaction. For this question, we tested two effects of social support, based on the literature: main effects and buffering effects. As mentioned above, buffering

effects were examined with the interaction terms between three job stressor variables and two social support variables. For the main effects of social support on job satisfaction, we assumed that social support variables would have direct, positive and significant impacts on job satisfaction. As presented in Table 3, both supervisor support and coworker support had positive and significant effects on job satisfaction, as expected. Thus, H4 and H5 were supported. In addition, according to the comparison of the standardized coefficients, coworker support was more influential than supervisor support in enhancing police officers' job satisfaction in Korea.

To test the buffering effects of social support variables on the relationship between job stressors and job satisfaction, this study included six interaction terms (three job stressor variables  $\times$  two social support variables). Based on the buffering hypothesis, we expected that these six interaction terms would mitigate the impacts of job stressors on job satisfaction. However, unlike our expectations, Table 3 shows that none of these six interaction terms had a statistically significant impact on job satisfaction. This result suggests that social support does not alleviate the negative effects of job stress on job satisfaction in the case of the Korean Police officers. That is, the buffering hypotheses (H6 and H7) were rejected.

### **Discussion and conclusion**

The overall aim of the present study was to identify the relationship between job stressors and job satisfaction, and the effect of social support on this relationship. Given that job stress is growing with the diffusion of government reforms, it is necessary to examine the effects of job stress in public sector organizations. Also, social support is an important factor at work in that it may relieve the harmful effects of job stress. In the field of public administration and public personnel management, however, few studies have been conducted on this topic. Therefore, utilizing a sample of police officers in South Korea, this study aimed to fill the gap in the research on job stress, social support and job satisfaction by examining the relationships among them.

First, this study investigated the relative effects of three job stressors (role overload, role ambiguity and bad physical environment) on job satisfaction, considering six control variables. The analysis results indicated that only role ambiguity and physical environment have significantly negative effects on job satisfaction, and role ambiguity has a larger influence on job satisfaction than bad physical environment. Second, with regard to the main effects of two social support variables, the analysis results show that both supervisor support and coworker support have direct, positive and significant impacts on the job satisfaction of police officers. That is, the main effects model worked well in this research. Yet the analysis results for the buffering effects of social support variables show that two social support variables do not mitigate the effects of job stressors on job satisfaction, contrary to our expectation. That is, the analysis results suggest that social support has only main effects (i.e., direct influence) on job satisfaction in the case of Korean police officers. These results are consistent with those of previous research supporting the main effects of social support (Kaufman & Beehr, 1981; LaRocco & Jones, 1978) and no buffering effects of social support (Barling, Bluen, & Fain, 1987; LaRocco, House, & French, 1980). Of course, it has been demonstrated by scholars that social support may interact with job stress and have a buffering effect (Beehr et al., 1990; Ok & Kim, 2001), but this research suggests that supervisor support and coworker support are likely to directly enhance police officers' job satisfaction without interacting with job stress.

The distinction between main effects and buffering effects has important implications for practice, because public organizations can utilize and make the most of social support when they understand its precise effect (Ganster et al., 1986). If social support has the main effect, it may be utilized for the purpose of improving job satisfaction irrespective of job stress. On the contrary, if social support has a buffering effect in the relationship between job stress and job satisfaction, it may be used as a coping resource (Boumans & Landeweerd, 1992). As a coping resource, social support acts as a moderator against job stress and weakens the detrimental effects of excessive job stress. As mentioned earlier, the buffering effect means that the presence of job stress would not lead to negative outcomes for those employees who receive or perceive a high amount of social support from others. However, the findings of this study raise doubt about the effect of social support as a coping resource. This result suggests that frequently offered strategies for social support as a coping resource may not always be appropriate. According to the conclusion of Beehr et al. (1990, p. 61),<sup>7</sup> nonjob-related communications have buffering effects while positive or negative job-related communications have main effects and few buffering effects, and we think this conclusion may have important implications for this result. They suggest social support might reduce the harmful effects of job stressors when employees talk to each other about nonwork issues and use distraction strategies (Beehr et al., 1990, p. 79).

The findings of this study suggest several strategies that police organizations may choose to consider if they want to enhance job satisfaction among their employees. First, police organizations can leverage the level of job satisfaction by increasing employee perceptions of role clarity and improving the work environment. Our analysis results show that role ambiguity and bad physical environment are negatively related to job satisfaction. To reduce role ambiguity, managers in the police need to clarify employees' duties, communicate clearly about task objectives and provide performance feedback (Hassan, 2013; Wright & Davis, 2003). Also, a friendly working environment for employees should be provided by improving facilities. Jung and Lee's (forthcoming) analysis results show that physical working environments are still important in improving performance, even if we recognize the importance of human relations.

Second, the police should create a friendly and cooperative organizational culture, in which employees can have better ties with supervisors and colleagues. However, the ranking system for police officers is quite strict, making their relationship structure very hierarchical and vertical. This could be the reason why coworker support has more impact in improving job satisfaction in this study. More horizontal and closer relationships between supervisors and employees may result in more social support at work. As the results of this study indicate, employees' job satisfaction can be improved if they have support from supervisors or coworkers. That is, a cooperative organizational culture and supervisors' attention to employees will be effective in enhancing job satisfaction. Whitford, Lee, Yun, and Jung (2010) show that horizontal collaboration with colleagues and vertical collaboration with supervisors have significant positive effects on improving organizational performance.

Last, we recommend that police organizations pay greater attention to countermeasures against job stress. With pervasive reforms and changes in public organizations, the job stress among employees is becoming worse (Korunka et al., 2003). In addition, police officers usually have high job stress because of the nature of the work. However, little is known about and little attention has been paid to how to deal with police officers' job stress, in spite of numerous observations that police officers have high levels of job stress that exert major influences on organizational outcomes. Police

should embrace recent studies bringing attention to job stress and try to cope actively with employees' job stress. The Korean National Police Agency, for example, has been test-operating a 'Police Trauma Center' since August 2013, based on the perception of the severity of police stress. This center allows Korean police officers to obtain free psychological counseling from experts. The police should explore a variety of other coping resources and apply the relevant countermeasures to police officers.

### Funding

This work was supported by 'Overseas Training Expenses for Humanities & Social Sciences' through Seoul National University (SNU) in 2014.

### Notes

1. According to the Yerkes Dodson Law, a 'reasonable amount of pressure, anxiety, or fear in the environment leads to higher performance among employees than if stress is not present' (Le Fevre et al., 2003, p. 727). Scholars such as Selye (1956) called this kind of good stress 'eustress'.
2. Strain can be defined as 'any deviation from normal responses in the person' (Caplan, Cobb & French, 1975, p. 3).
3. The buffering effect refers to a moderating effect (Ganster et al., 1986).
4. The ratio of superintendent general and above in Korean National Police is 0.06% in 2011 (National Police Agency, 2012).
5. All the items in this study were measured with this scale.
6. The Breusch-Pagan test for heteroscedasticity ( $\chi^2 = 49.23$ ) showed that the null hypothesis of constant variance was rejected at the .05 level. The variance inflation factors (VIF) were also checked to detect multicollinearity. All the VIF exist within the acceptable degrees (the largest VIF is 6.81), which indicates that there are no multicollinearity problems among the independent variables (Gujarati, 2003).
7. In their analysis, social support is measured in terms of the contents of communications.

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