© *International Review of Public Administration*
2013, Vol. 18, No. 3

THE RELATIONSHIP BETWEEN HRM PRACTICES AND ORGANIZATIONAL PERFORMANCE IN THE PUBLIC SECTOR: FOCUSING ON MEDIATING ROLES OF WORK ATTITUDES

JAEKWON KO
Virginia Tech, USA

&
AARON SMITH-WALTER
Virginia Tech, USA

Using the 2011 Federal Employee Viewpoint Survey (FEVS), this study analyzes HRM practices based on high-performance work systems (HPWS) in federal-level public sector organizations, and the effects on employees' work attitudes and organizational performance. The authors argue that HRM practices contribute to increased organizational commitment, organizational citizenship behavior, and job involvement, and that these work attitudes are positively related to organizational performance. Evidence is presented to suggest that work attitudes mediate relationships between HRM practices and organizational performance, with certain HRM practices being associated with improved work attitudes. Implications for future research are also discussed.

Key words: high-performance work systems, organizational performance, mediating roles of work attitudes, HRM as a black box

INTRODUCTION

During the last several decades, many scholars and practitioners have paid attention to the importance of managing human resources, because HRM practices can enhance individual and organizational performance and encourage employees to improve their attitude and behavior. Evidence has accumulated demonstrating a positive association between HRM practices and organizational performance (Becker & Gerhart, 1996; Delery & Doty, 1996; Huselid, 1995; Huselid, Jackson, & Schuler, 1997). In addition, empirical studies have shown the positive influence of HRM practices on employees' work attitudes (Gong, Chang, & Cheung, 2010; Gould-Williams, 2003; Herrbach, Mignonac, Vandenberghe, & Negrini, 2009).

While previous studies point to the impact that HRM practices can have on employees' attitudes toward both work and organizational performance, several scholars (Wall & Wood, 2005; Wright & Gardner, 2003) have suggested that the relationship between HRM practices and organizational outcomes might be more complicated than is typically depicted. However, the tendency of previous studies to limit their explorations solely to the relationship between either HRM practices and organizational performance or HRM practices and employees' work attitudes creates a hole in our understanding of the manner in which HRM practices influence organizational outcomes, a hole that this paper will attempt to fill.

Relatively few studies have explored the mechanism by which employees' attitudes toward the workplace are related to HRM practices and organizational performance. Some scholars have referred to this as the "black box" problem (Gould-Williams & Mohamed, 2010; Tremblay, Cloutier, Simard, Chenevert, & Vandenberghe, 2010; Wright, Gardner, & Moynihan, 2003). Using social exchange theory, this study explores how HRM practices change employees' work attitudes, leading employees to reciprocate in positive ways toward achieving organizational goals (Settoon, Bennett, & Liden, 1996; Wayne, Shore, & Liden, 1997). For example, when organizations provide training and development opportunities, rewards, and demonstrate managerial concern for employees' well-being, employees become prosocially motivated and have stronger feelings of obligation toward the organization (Kuvaas & Dysvik, 2009).

Studies that have explicitly incorporated employees' work attitudes into analyses of the relationship between HRM practices and organizational performance in public sector organizations are also relatively rare. Using the 2011 Federal Employee Viewpoint Survey (FEVS), conducted by the U.S. Office of Personnel Management (OPM), this study focuses on HRM practices and their effect on public sector organizations. This study advances prior HRM research in public administration in two ways. First, we address the mediating effects of three types of work attitude, organizational commitment, organizational citizenship behavior, and job involvement, on the relationship between HRM practices and organizational performance. Although several studies have examined the mediating effects

of job satisfaction, organizational commitment, and organizational citizenship behavior, little is known about the mediating effect of job involvement. Second, few studies have explored the mediating mechanism in public administration (see, however, Messersmith, Patel, Lepak, & Gould-Williams, 2011). Focusing on U.S. federal agencies, this study tests the effects of HRM practices on organizational performance.

In terms of the layout of the paper, we first review relevant HRM theories. Second, we review relationships between HRM practices and organizational performance, exploring the nature of the HRM practices–attitudes linkage. Third, we examine the effect of HRM practices on organizational performance and mediating impacts of employee attitudes. Finally, empirical findings and their implications are discussed.

HIGH-PERFORMANCE WORK SYSTEM AS HRM PRACTICE

"High-performance work system" and "high-commitment" HRM practices can have a positive impact on organizational performance (Arthur, 1994; Gould-Williams, 2003; Huselid, 1995; Wood & De Menzies, 1998). Both approaches share the view that HRM practices should be designed to motivate employees and enhance employees' capacity. They differ in that HPWS is broader in scope, since it emphasizes the competitive advantage gained by such human resource (Wood, de Menezes, & Lasaosa, 2003). In this study, we focus on HRM based on HPWS, because of its breadth in connecting practices that recruit, select, develop, motivate, and retain employees.

Previous research has shown that HPWS maximizes employee contributions toward competitive advantage (Becker & Huselid, 1998; Huselid, 1995). HPWS theorists assume that HPWS contributes to improvements in employee performance through three interrelated, causal routes: a) developing employee skills and abilities; b) increasing an employee's motivation for discretionary effort; and c) providing employees with the opportunity to make full use of their knowledge, skills, and other attributes in their jobs (Macky & Boxall, 2007). In their meta-analysis, Combs et al. (2006) conclude that HPWS is designed to enhance employees' skills, commitment, and productivity, which positively relates to organizational performance.

Empirical research on HPWS is almost exclusively limited to the private sector. Though organizational performance and individual productivity are major concerns for human resource managers in both the public and private sectors, relatively few studies have explored the effect of HRM practices in the public sector. The studies of Gould-Williams (2003) and Kim (2012) are important exceptions. Gould-Williams' study shows that use of specific HR practices in local government organizations in the United Kingdom is associated with a greater degree of workplace trust, job satisfaction, commitment, effort, and perceived organizational performance. Focusing on U.S. state government IT employees, Kim's study reveals that promotion and advancement opportunities, training

and development, supervisory communications, pay and reward satisfaction, and family-friendly policies are all significant variables affecting turnover intention.

While many studies have enumerated various practices facilitating HPWS, there is not one fixed list of generally applicable practices that fully encapsulates HPWS. While an exhaustive list has proven elusive, some exemplary practices that have been identified are selective recruitment and selection, extensive training and development, regular performance appraisals, performance-contingent rewards, high levels of employee involvement, decentralized decision making, and employment security (Datta, Guthrie, & Wright, 2005; Snape & Redman, 2010; Zacharatos, Barling, & Iverson, 2005). In this study, seven HPWS-based HRM practices are investigated: selection, training and development, performance-related rewards, performance appraisal, communication, empowerment, and participation in decision making.

HRM AS A BLACK BOX

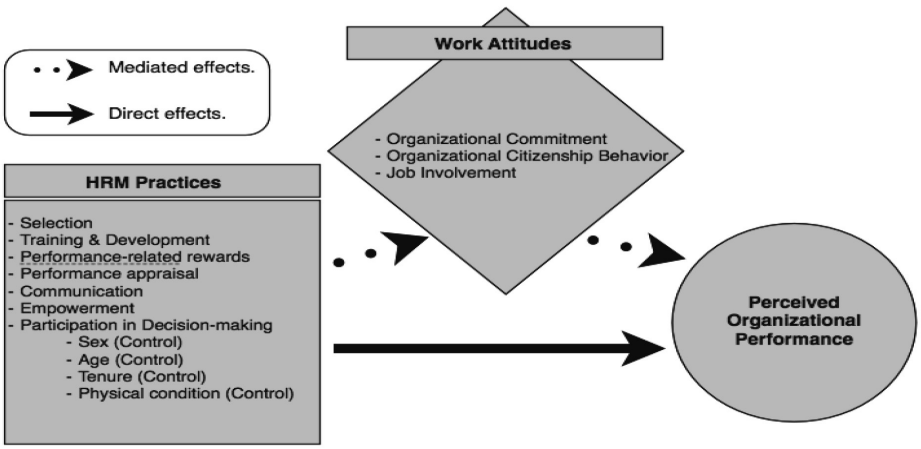
Over the past twenty years, there has been a considerable expansion in theory and research about human resource management and performance. A number of studies reported that HRM practices are positively associated with organizational performance (Arthur, 1994; Delery & Doty, 1996; Huselid, 1995). Some scholars criticize previous studies by pointing out that the key role of employees and the importance of employees' perceptions and behavior in understanding the relationship between HRM practices and organizational performance were neglected (Guest, 2011). Insufficient understanding of employee attitudes and behavior leaves partly unexplained the process whereby HRM practices may play a role in organizational performance. There is a growing awareness of the need to explore the "black box" containing the links between HRM practices and organizational performance. For example, Boselie, Dietz and Boon (2005: 77) note:

> 'Black box' studies conceptualise employees' perceptions and experience as the primary mediating variable, and the 'signaling' effects of HRM are understood to forge a psychological contract between the employer and employees that shapes these perceptions and experience.

Messersmith et al. (2011) explore the idea of the black box and seek to identify the role of organizational commitment, job satisfaction, and individual levels of psychological empowerment in understanding the link between HPWS and organizational performance. Their survey of employees and managers in local governments in Wales led to the finding that "the effects of HPWS may partially operate through a path connecting employee attitudes to discretionary employee behaviors and ultimately to unit-level performance" (Messermith et al. 2011: 1114). They further find that mediating factors may function to

influence the level of organizational citizenship behavior, which then yields increased department performance. While their results are suggestive of the role played by mediating factors on the efficacy of HPWS in achieving increased performance, their focus on local governmental units in the United Kingdom leaves room for research to explore similar mediating relationships in public sector organizations organized on a larger scale, a question that this study addresses.

Figure 1. Theorized relationships



HRM PRACTICES AND OUTCOMES

There is strong evidence that HRM practices influence employee perceptions of organizational support. In this study, we draw upon social exchange theory to conceptualize the effect of HRM practices on employees' work attitudes. According to the theory, the relationship between an organization and its employees may be identified as involving social exchange or: "imperfectly specified terms and a norm of reciprocity, such that discretionary benefits provided to the exchange partner are returned in a discretionary way in the longer term" (Snape & Redman, 2010: 1224). Additionally, the inducement-contribution logic that employees will reciprocate beneficial HRM practices with positive work attitudes, which will enhance performance (Kuvaas, 2008), leads scholars to assume that HRM practices influence organizational performance by changing employees' work attitudes.

In the HRM field, organizations play a key role in creating positive social exchanges. When organizations offer skill-development efforts, employees become motivated to expend effort to benefit the organization (Kuvaas & Dysvik, 2010), and HRM practices

such as appreciation, investment, and recognition help to foster a sense of a being a party to a social exchange rather than simply an economic one (Settoon et al., 1996; Shore & Shore, 1995). Formative performance appraisals also encourage employees to feel that the organization wishes to invest in improving their skills (Tremblay et al., 2010). Employee participation in the decision-making process sends a strong message that employees are valued organizational assets, which leads to a positive social exchange (Snape & Redman, 2010). In short, employees feel obligated to reciprocate in ways such as a positive work attitude when they receive positive and beneficial actions from the organization (Settoon et al., 1996). Consequently, employers may reap higher performance from employees.

In this study, work attitudes are characterized as organizational commitment, organizational citizenship behavior, and job involvement, all of which are regarded as predictors of improved performance.

Work Attitudes and Performance

Measures of work attitude included in this study relate to organizational commitment, organizational citizenship behavior, and job involvement, all of which are regarded as predictors of improved performance. Appelbaum, Bailey, Berg, & Kalleberg (2000) showed that U.S. organizations using HPWS perform better in terms of higher productivity and higher-quality outputs, and employees in these systems are more likely to be committed to their jobs. Other research has repeatedly shown that HRM practices are related to organizational commitment among employees in general (e.g., Gould-Williams & Mohamed, 2010; Meyer & Smith, 2000).

Several studies have shown that employees receiving supportive HRM practices have higher levels of organizational citizenship behavior (Becker & Huselid, 1998; Gong et al., 2010; Snape & Redman, 2010), defined as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in aggregate promotes the effective functioning of the organization" (Organ, 1988: 4).

Job involvement has various definitions across different studies, including (a) the importance of an individual's work for his or her total self-image; (b) the degree to which the employee perceives his or her job performance as central to his or her self-concept or self-esteem, and; (c) the cognitive state of an individual's psychological identification with the job (Boon, Arumugam, Safa, & Bakar, 2007). Previous research has revealed that HRM practices are positively associated with job involvement (Boon et al., 2007; Wilkinson, Redman, Snape, & Marchington, 1998).

Consistent with previous HRM research, this study assumes that HRM practices based on HPWS are positively associated with employees' work attitudes. Therefore, we put forth the following hypotheses:

H1: There is a positive relationship between HRM practices and employees'

organizational commitment.

H2: There is a positive relationship between HRM practices and employees' organizational citizenship behavior.

H3: There is a positive relationship between HRM practices and employees' job involvement.

MEDIATING EFFECTS OF WORK ATTITUDE

When employees regard their relationship with an organization as a social exchange, they are more likely to be satisfied with their job, committed to their organization, feel a sense of personal accomplishment in their work, and assist coworkers. This process is likely to lead to positive synergies among employees and, as a result, improved performance. Thus, the effect of HRM practices on organizational performance may be mediated by employees' work attitudes that stem from a positive social exchange.

There is evidence that organizational commitment is positively associated with measures of organizational performance (e.g., Harter, Schmidt, & Hayes, 2002; Meyer, Stanley, Herscovitch, & Topolnytsky, 2001). Committed workers identify psychologically with their employer and feel a stronger attachment to the organization. Consequently, they are more likely to expend discretionary effort towards achieving organizational ends (Appelbaum et al., 2000). Employees who are committed to their organization can also be expected to show less counterproductive behavior than those less committed, which leads to improved performance (Wright et al., 2003). In addition, previous research indicates that job involvement is a good predictor of job performance (Keller, 1997). Podsakoff and Mackenzie (1997) found that an individual's organizational citizenship behavior was related to quality and quantity aspects of his or her work group's performance.

H4: There is a positive relationship between HRM practices and organizational performance.

H5: The relationship between HRM practices and organizational performance is mediated by employees' work attitudes.

METHODS

Data and Analytic Method

This study used data from the 2011 Federal Employee Viewpoint Survey (FEVS), conducted by the U.S. Office of Personnel Management (OPM), to test the hypotheses. The 2011 FEVS was administered to full-time, permanent employees of departments and large

agencies and the small/independent agencies in the U.S. federal government. A total of 266,000 employees responded, a response rate of 49.3% (FEVS 2011).[1] In order to test the hypotheses outlined earlier, we used ordinary least squares regression analysis.

HRM and Work Attitude Measures

In general, selection, training and development, performance-related rewards, performance appraisal, communication, empowerment, and participation in decision making have been examined as HRM practices in previous research on HPWS. We therefore identified seven HRM practices that are consistent with HPWS, resulting in the list contained in Table 1.

We focused on three work attitudes: organizational commitment, organizational citizenship behavior, and job involvement. Organizational commitment refers to the individual's identification with an organization. In this study, organizational commitment was measured using a normative commitment scale, which is similar to Lee and Whitford (2008) and Caillier (2012). The scale included the following items: "I recommend my organization as a good place to work," "In my organization, leaders generate high levels of motivation and commitment in the workforce," and "I have a high level of respect for my organization's senior leaders." The reported scores were averaged for the items, and the Cronbach's alpha for the scale was .86. Organizational citizenship behavior is the voluntary action of individuals in an organization that promote its effectiveness (Organ, 1988). These types of behavior include working beyond the job description, being a good team member, not being disruptive, and participating in organizational activities. This study used two items to measure organizational citizenship behavior: "The people I work with cooperate to get the job done" and "Employees in my work unit share job knowledge with each other." The scores for the scale were averaged, and the Cronbach's alpha for the scale was .73. Job involvement refers to the extent to which the job is central to the employee's identity (Lawler & Hall, 1970). Following Caillier (2012), two items were used to measure job involvement: "My work gives me a feeling of personal accomplishment" and "I like the kind of work I do." The scores for the scale were averaged, and the Cronbach's alpha for the scale was .79.

Organizational Performance Measure

The dependent variable in this study is organizational performance. This is a subjective performance measure involving employee assessment rather than a more objective measure. Although Meier and O'Toole's study (2013) points out the problem in measuring subjective performance in public management, a number of public management studies have used subjective measures of organizational performance (Brewer, 2005; Choi & Rainey, 2010; Pandey, Coursey, & Moynihan, 2004; Pitts, 2009). With regard to subjective measures and objective measures of organizational performance, Boyne and Walker (2002)

Table 1. Item Descriptions and Reliability Coefficients

Variable	α	Mean	SD	Domain
Selection		3.24	1.118	1-5
• My work unit is able to recruit people with the right skills				
Training and development	.812	3.62	.940	1-5
•I am given a real opportunity to improve my skills in my organization. •My training needs are assessed. •Supervisors/team leaders in my work unit support employee development.				
Performance-related rewards	.835	3.03	1.032	1-5
•Promotions in my work unit are based on merit. •Awards in my work unit depend on how well employees perform their jobs. •Pay raises depend on how well employees perform their jobs.				
Performance appraisal		3.77	1.119	1-5
•My performance appraisal is a fair reflection of my performance				
Communication	.859	3.61	.934	1-5
•Discussions with my supervisor/team leader about my performance are worthwhile. •My supervisor/team leader provides me with constructive suggestions to improve my job performance. •Managers communicate the goals and priorities of the organization. •Managers promote communication among different work units (for example, about projects, goals, needed resources).				
Empowerment		3.31	1.093	1-5
•Employees have a feeling of personal empowerment with respect to work processes.				
Participation in decision making		3.46	1.072	1-5
•How satisfied are you with your involvement in decisions that affect your work?				
Organizational commitment	.861	3.54	.994	1-5
•I recommend my organization as a good place to work. •In my organization, leaders generate high levels of motivation and commitment in the workforce. •I have a high level of respect for my organization's senior leaders.				
Organizational citizenship behavior	.729	3.88	.866	1-5
•The people I work with cooperate to get the job done. •Employees in my work unit share job knowledge with each other.				
Job involvement	.789	4.08	.850	1-5
•My work gives me a feeling of personal accomplishment. •I like the kind of work I do.				
Performance	.763	3.90	.733	1-5
•The skill level in my work unit has improved in the past year. •How would you rate the overall quality of work done by your work unit? •The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals. •Overall, how good a job do you feel is being done by your immediate supervisor/team leader?				

Table 2. Measures of Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Performance																
2. Organizational commitment	.698**															
3. OCB	.670**	.515**														
4. Job involvement	.509**	.542**	.403**													
5. Sex	.027**	.003	.066**	.010**												
6. Race	-.043**	.008**	-.068**	-.009**	-.146**											
7. Age	-.015**	-.29**	.013**	.074**	.055**	-.056**										
8. Tenure	-.023**	-.055**	.026**	.047**	-.007**	-.048**	.464**									
9. Workload	.367**	.386**	.275**	.280**	.022**	.044**	-024**	-.055**								
10. Physical condition	.329**	.346**	.275**	.266*	.061**	.040**	-.002	.008**	.256**							
11. Performance appraisal	.521**	.497**	.375**	.379**	-.003	-.035**	-.042**	-.035**	.302**	.279**						
12. Selection	.570**	.525**	.459**	.335**	-.006**	.021**	-.028**	-.059**	.363**	.282**	.339**					
13. Empowerment	.646**	.695**	.494**	.495**	.048**	.019**	.002	-.001	.360**	.322**	.437**	.487**				
14. Participation	.622**	.690**	.463**	.499**	.037**	-.006**	-.007	-.003	.365**	.305**	.486**	.445**	.626**			
15. Training and development	.708**	.690**	.527**	.524**	.031**	-.031**	-.035**	-.024**	.382**	.629**	.557**	.488**	.617**	.654**		
16. Performance-related rewards	*651**	.662**	.517**	.415**	.035**	-.005**	-.007**	-.020**	.323**	.313**	.532**	.537**	.598**	.584**	.646**	
17. Communication	*769**	.758**	.547**	.486**	.021**	-.006**	-.031**	-.032**	.355**	.315**	.586**	.486**	.634**	.679**	.777**	.665**

Note: ** $p < 0.01$

found that there are strong connections between subjective and objective measures of performance, with the correlation often as high as 80 percent. Consistent with a previous study (Choi & Rainey, 2010), the measure of organizational performance was developed by using principal components factor analysis with varimax rotation, with the items listed in Table 1.

Control Variables

This study includes six control variables: sex, race, age, tenure, workload, and physical condition. The sex variable is coded 0 when a respondent is female and 1 when male. The race variable is coded 0 when a respondent is non-minority and 1 for minority. Age is represented by an ordinal-level measure, where 0 = 29 and under, 1 = 30–39, 2 = 40–49, 3 = 50–59, and 4 = 60 or older. Tenure is also represented by an ordinal variable, where 0 = up to 3 years, 1 = 4 to 5 years, 2 = 6 to 10 years, 3 = 11 to 20 years, and 4 = more than 20 years. Workload was measured by the question "My workload is reasonable." In addition, physical condition was measured by the question "Physical conditions (for example, noise level, temperature, lighting, cleanliness in the workplace) allow employees to perform their jobs well." These items were scaled from 1 (very poor) to 5 (very good).

RESULTS

All variables of this study were measured based on self-reported responses that came from the 2011 FEVS, which can lead to common method bias in that the overall positive attitude of survey respondents may affect all of their responses (Podsakoff & Organ, 1986). When independent and dependent variables are measured by the same survey data, the regression coefficients can be inflated. To examine the seriousness of common method bias, we used Harman's single-factor test. In this single-factor test, common method bias is assumed to exist if (1) a single factor emerges from unrotated factor solutions, or (2) a first factor explains the majority of the variance in the variables (Podsakoff & Organ, 1986). If only one factor is retained and it explains most covariance, the bias is serious. In this study, the biggest factor explains 40 percent of the covariance among the measures, which means that common method bias is not a serious concern.

Both the reliability and validity of the measures were examined. Cronbach's coefficient alpha (α) was used to assess the reliability of the measures. Each scale demonstrated satisfactory reliability (α exceeding 0.70). Table 1 and Table 2 provide the means, standard deviations, and correlations of the variables used in the study. To examine the effect of HRM practices on work attitudes and organizational performance, we used ordinary least squares (OLS) multiple regression analyses. Table 3 presents the regression results. Overall, the independent variables explained a significant degree of variance in the dependent

variable, with the explanatory variables explaining 71 percent of variance in organizational commitment, 40 percent of variance in organizational citizenship behavior, 36 percent of variance in job involvement, 69 percent of variance in organizational performance (without OC, OCB, and JI), and 73 percent of variance in organizational performance (with OC, OCB, and JI). From the variance inflation factor (VIF) tests on all models, the highest VIF value is 3.792. Thus, multicollinearity does not appear to be a problem. This study includes a sizable number of observations, and with such a large number of observations, meaningless variations within variables may be statistically significant (Caillier, 2013). Therefore, care is needed when interpreting the results of this study, as is the case in any study that relies on a large sample size.

In the model of organizational commitment, the R2 was .705, and a statistically significant association was noted between all HRM practices. It is worth noting that that performance appraisal has a negative impact on organizational commitment. Participation in decision making, communication, and empowerment led to higher levels of organizational commitment. The finding of the effect of performance appraisal on organizational commitment was not consistent with H1.

Hypothesis 2 proposed that HRM practices are positively associated with organizational citizenship behavior. As expected, all HRM practices had positive and significant impacts on organizational citizenship behavior and H2 was supported. Communication was the most powerful predictor. Interestingly, employees who perceived high degrees of selection and rewards reported higher levels of organizational citizenship behavior.

In the model of job involvement, though all HRM practices significantly related to job involvement, rewards had a negative effect, in partial support of H3. The R2 was .355. Employees who perceived high degrees of training and development reported the highest level of job involvement.

In this study, HRM practices showed positive and significant effects on organizational commitment, organizational citizenship behavior, and job involvement, except for performance appraisal's effect on organizational commitment and rewards' effect on job involvement. The independent variables with the highest regression coefficient on the dependent variable vary. Communication was the most powerful predictor of organizational commitment and organizational citizenship behavior, whereas training and development had the highest regression coefficients on job involvement.

Hypothesis 4 proposed that HRM practices are positively associated with organizational performance. Not surprisingly, all HRM practices had positive and significant impacts on organizational performance at the .001 level. The R2 was .686, and H4 was supported.

Hypothesis 5 predicted that the relationship between HRM practices and organizational performance is mediated by employees' work attitudes. Following the procedure recommended by Judd and Kenny (1981), we tested the mediation of work attitudes using three steps. In models 1, 2, and 3, HRM practices were significantly associated with organizational commitment, organizational citizenship behavior, and job involvement.

Table 3. OLS Regression Analyses

	Model 1 (OC)	Model 2 (OCB)	Model 3 (JI)	Model 4 (Performance)	Model 5 (Performance)
	β(SE)	β(SE)	β(SE)	β(SE)	β(SE)
Sex	-.030*** (.002)	036*** (.003)	-.021*** (.003)	-.003** (.002)	-.010*** (.002)
Race	-.002 (.002)	-.063*** (.003)	-.002 (.003)	-.043*** (.002)	-.026*** (.002)
Age	.006*** (.001)	.005** (.002)	.079*** (.002)	.006*** (.001)	.001 (.001)
Tenure	-.036*** (.001)	.044*** (.001)	.022*** (.001)	.003** (.001)	-.007*** (.001)
Workload	.034*** (.001)	.007*** (.001)	.031*** (.001)	.017*** (.001)	.011*** (.001)
Physical condition	.039*** (.001)	.047*** (.001)	.052*** (.001)	.026*** (.001)	.009*** (.001)
Performance appraisal	-.017*** (.001)	.002 (.002)	.067*** (.002)	.033*** (.001)	.030*** (.001)
Selection	.066*** (.001)	.164** (.002)	.017*** (.002)	.162*** (.001)	.116*** (.001)
Empowerment	.218*** (.001)	.116*** (.002)	.184*** (.002)	.141*** (.001)	.090*** (.001)
Participation	.174*** (.002)	.018*** (.002)	.164*** (.002)	.033*** (.001)	.011*** (.001)
Training and development	.057*** (.002)	.106*** (.003)	.227*** (.003)	.151*** (.002)	.109*** (.002)
Performance-related rewards	.127*** (.002)	.138*** (.002)	-.022*** (.002)	.099*** (.001)	.059*** (.001)
Communication	.333*** (.002)	.192*** (.003)	.024*** (.003)	.358*** (.002	.290*** (.002)
OC					.051*** (.002)
OCB					.258*** (.001)
JI					.053*** (.001)
R^2	.705	.398	.355	.686	.731
Number of Cases	216,865	216,812	216,847	216,865	216,794

Note: OC=organizational commitment, OCB=organizational citizenship behavior, JI=job involvement; **p< .01, ***p < .001

In Model 4, HRM practices significantly related to organizational performance. Then, in Model 5, organizational commitment, organizational citizenship behavior, and job involvement significantly related to organizational performance. The effect of HRM practices diminished after controlling for the mediating effects of organizational commitment, organizational citizenship behavior, and job involvement. The results showed that these work attitudes significantly mediated the relationship between HRM practices and organizational performance. Surprisingly, organizational citizenship behavior had the highest regression coefficient on organizational performance.

Finally, with regard to the control variables, ceteris paribus, the results showed that female employees tended to have higher levels of organizational commitment and job involvement, whereas they showed a lower level of organizational citizenship behavior. Older workers had higher levels of work attitude than others. Organizational tenure was significantly and positively associated with organizational citizenship behavior and job involvement. Physical condition was a predictor of work attitude and organizational performance.

DISCUSSION

Previous research in public administration has focused on individual impacts of HRM practices on outcomes including job satisfaction, organizational commitment, turnover intention, performance, and so on. The purpose of this study was to examine the underlying mechanisms through which HRM practices affect organizational performance, by peering into the "black box." In particular, this study focused on individuals' work attitudes as mediators between HRM practices and organizational performance. Using social exchange theory, this study conceptualized and tested a model that provides insight into the linkages between HRM practices and organizational performance.

This study found positive associations between employees' perceptions of HRM practices and work attitudes. Overall, HRM practices had positive impacts on organizational commitment, organizational citizenship behavior, and job involvement. In particular, results showed that participation in decision making, empowerment, and communication were powerful predictors of organizational commitment and job involvement. Though HPWS consists of several concepts, the core idea is that HPWS provides employees with the autonomy and discretion needed to meet the demands of the modern workplace. Among various practices based on HPWS, participation in decision making, empowerment, and communication are close to autonomy and discretion, which lead to higher levels of organizational commitment and job involvement. Training and development, which is defined as a planned learning experience designed to bring about permanent change in an individual's knowledge, attitudes, or skills (Noe, 1986), was the strongest predictor of job involvement. Consistent with previous research, a successful training and development

program creates more favorable employee attitudes and helps employees with personal development and job involvement (Cherrington, 1995).

However, contrary to expectations, performance appraisal was negatively associated with organizational commitment. In addition, its effect on organizational citizenship behavior was not significant. A possible explanation is that even though employees are given meaningful feedback on their performance, the feedback itself reduces organizational commitment. When organizations focus on individual performance, employees may regard performance appraisal as a subtle form of control (Gould-Williams & Mohamed, 2010). In addition, Oh and Lewis' study (2009) found that among U.S. federal government employees, performance appraisal systems linking extrinsic rewards to performance are less effective for employees who are intrinsically motivated. In the same vein, Nichoff and Moorman (1993) argued that performance appraisal as organizational control reduces employees' autonomy and self-responsibility. In short, performance appraisal that focuses attention on task accomplishment could constrain extra-role behaviors that characterize organizational citizenship.

Interestingly, the finding regarding the relationship between performance-related rewards and job involvement does not support our expectation. Previous studies have highlighted the importance of rewards in job involvement (Boon et al., 2007; Wilkinson et al., 1998). Employees value rewards, which leads to increased motivation. Therefore, employees are more involved in their jobs. Contrary to this intuitive relationship between rewards and performance, our finding shows that performance-related rewards are negatively associated with job involvement. This finding is consistent with the results of O'Driscoll and Randall's study (1999), in which they distinguished between intrinsic rewards and extrinsic rewards. Intrinsic rewards included the degree of challenge in the job, opportunities to use skills and abilities, and the amount of freedom respondents had in deciding how to perform their work. Intrinsic rewards had a positive influence on job involvement. By contrast, extrinsic rewards included pay and fringe benefits, opportunities for promotion or advancement, and praise for job performance. Extrinsic rewards did not significantly predict job involvement. With regard to the relationship between performance-related rewards and job involvement, employees may consider performance-related rewards as inhibiting elements of job security; therefore performance-related rewards have a negative influence on job involvement.

Findings related to performance appraisal and performance-related rewards constitute a significant contribution in the present study. Many previous studies have explored incorporating HPWS as a single package, because HPWS provides employees with the autonomy and discretion needed to meet the demands of the modern workplace. Therefore, HPWS can encourage employees to engage in the prosocial behavior that helps organizations to meet goals and objectives (Messersmith et al., 2011; Snape & Redman, 2010). However, our findings revealed that some practices of HPWS might have different outcomes. We encourage future research to explore the viewpoint that HPWS should be

studied both as a complete package and as individual practices.

This study also contributes to exploring potential individual attitudinal and behavioral mediators that operate in the black box between HRM practices and organizational performance. Of the three variables hypothesized as mediators in the relations between HRM practices and organizational performance, the strongest evidence for mediation was obtained for organizational citizenship behavior. Although we also found evidence that organizational commitment served as a mediator, the link between organizational commitment and organizational performance was slight. However, findings revealed that the mediating effect of organizational citizenship behavior was strong. Podsakoff and MacKenzie (1997) suggested several reasons that organizational citizenship behavior might influence organizational performance: a) by enhancing coworker productivity, b) by freeing up resources for more productive purposes, c) by reducing the need to devote scarce resources to purely maintenance functions, d) by serving as an effective means of coordinating activities between team members and across work groups, and e) by enhancing an organization's ability to adapt to environmental changes.

From our findings we can derive several practical implications. The results from this study may also be helpful to managers who may need to justify the adoption of HPWS. For example, managers can show that the adoption of HPWS has tangible benefits with regard to individual employees' work attitudes, such as more organizational commitment, organizational citizenship behavior, and job involvement. All of these outcomes can lead to increased organizational performance. However, our findings related to performance appraisal and performance-related rewards alert managers to the dangers of simply adopting HPWS as one package. For example, when employees feel as if performance appraisal is utilized as a control mechanism, it can lead to decreased organizational commitment. In addition, extrinsic rewards have no influence on job involvement, and performance appraisals relying on extrinsic rewards fail to influence intrinsically motivated employees.

In addition to the inability of extrinsic rewards to motivate many employees, the counterproductive impact of performance appraisals found in this study may be the result of the lack of perceived fairness of the appraisal process itself. As Tang and Sarsfield-Baldwin (1996) found in their study of two hundred Veteran's Administration (VA) employees, the perceived fairness of performance appraisals depended on aspects of both distributive and procedural justice. Distributive justice dealt with the perception employees had regarding the fairness and equity associated with pay and promotion satisfaction. Procedural justice was composed of five factors: the two-way nature of communication, fairness of the process, supervisor trustworthiness, comprehension of the appraisal process, and the existence of clear expectations regarding work performance (Tang & Sarsfield-Baldwin, 1996: 27). Tang and Sarsfield's finding indicating that fairness is essential in performance appraisal procedures was echoed in a recent study of Malaysian civil servants, which stressed that "civil servants will be satisfied with their performance when they feel that their performance appraisal is fair" (Salleh et al., 2013: 126). These studies suggest that

one possible rationale behind our finding regarding the negative reactions to performance appraisals demonstrated in this study might be a perceived lack of fairness in the process on the part of employees. This possibility leads us to recommend that organizations seeking to implement HPWS in an effort to increase their performance do so in a transparent manner, and take the time to effectively communicate with employees about work-related expectations and the mechanisms the appraisal process will use in evaluating performance.

CONCLUSION

This study is one of the few studies to have evaluated the intermediate linkages between HRM practices and organizational performance in the context of the public sector. Our results indicate that HRM practices can stimulate organizational performance directly as well as enhance organizational performance indirectly by affecting work attitudes. In addition, the results reveal that organizational citizenship behavior as a mediator plays an important role in improving organizational performance. Our study thus contributes to a better understanding of the black box phenomenon that links HRM practices to organizational performance. However, some limitations certainly do exist.

First, the current study is cross-sectional, so measuring HRM and performance at the same time-point is problematic. Because survey respondents have a tendency to maintain consistency in their responses, independent and dependent variables are affected by common method bias, which inflates the relationships among variables (Podsakoff & Organ, 1986). Therefore, causality cannot be deduced from the results. In light of this, future research should adopt a longitudinal design to uncover the dynamic influence of HPWS on overall performance. Second, the measures for work attitudes were not perfect. Although these measures are consistent with some of the underlying principles, they do not totally capture what it means for employees to be committed, involved, or to exercise discretion. Finally, we were able to obtain only subjective measures of relative performance. Although Wall et al. (2004) recently demonstrated the convergent, discriminant, and construct validities of subjective measures of relative performance, this type of measure does not reflect an exact effect of HRM practices. Future research should develop more rigorous measures of work attitudes and more independent, "objective" measures of performance.

NOTES

1. The 2011 FEVS was conducted to collect data on federal employees' perceptions about how effectively agencies were managing their workforces. The sample of the 2011 FEVS was a probability sample; that is, each employee in the target population had a known, non-zero probability of selection. Employees were grouped into 1,114 sample subgroups corresponding to agency, subagency, and supervisory status reporting requirements. A total of 560,084

employees were invited to participate from 83 agencies. These agencies make up 97 percent of the executive branch workforce (FEVS, 2011).

REFERENCES

Appelbaum, E, Bailey, T., Berg, P. and Kalleberg, A. 2000. *Manufacturing Advantage: Why High-Performance Work Systems Pay Off.* Ithaca, NY: ILR Press.

Arthur, J. B. 1994. Effects of Human Resource Systems on Manufacturing Performance and Turnover. *Academy of Management Journal* 37(3): 670–87.

Becker, B. and Gerhart, G. 1996. The Impact of HRM on Organizational Performance: Progress and Prospects. *Academy of Management Journal* 39(4): 779–801.

Becker, B. and Huselid, M. 1998. High Performance Work Systems and Firm Performance: A Synthesis of Research and Managerial Implications. in *Research in Personnel and Human Resource Management*, edited by G.R. Ferris. Greenwich, CT: JAI Press.

Boon, O. K., Arumugam, V, Safa, M. S. and Bakar, N. A. 2007. HRM and TQM: Association with Job Involvement. *Personnel Review* 36(6): 939–62.

Boselie, P., Dietz, G. and Boon, C. 2005. Commonalities and Contradictions in HRM and Performance Research. *International Journal of Human Resource Management* 15(3): 67–94.

Boyne, G. A. and Walker, R.M. 2002. Total Quality Management and Performance: An Evaluation of the Evidence and Lessons for Research on Public Organizations. *Public Performance and Management Review* 26(2): 111–31.

Brewer, G. A. 2005. In the Eye of the Storm: Frontline Supervisors and Federal Agency Performance. *Journal of Public Administration Research and Theory* 15(4): 505–27 .

Caillier, J. G. 2012. The Impact of Teleworking on Work Motivation in a U.S. Federal Government Agency. *American Review of Public Administration* 42(4): 461–80.

———. 2013. Are Teleworkers Less Likely to Report Leave Intentions in the United States Federal Government Than Non-Teleworkers Are? *American Review of Public Administration* 43(1): 72–88.

Cherrington, D. J. 1995. *The Management of Human Resources* (4th edn). Englewood Cliffs, NJ: Prentice-Hall.

Choi, S. and Rainey, H. G. 2010. Managing Diversity in U.S. Federal Agencies: Effects of Diversity and Diversity Management on Employee Perceptions of Organizational Performance. *Public Administration Review* 70(1): 109–21.

Combs, J, Lui, Y, Hall, A. and Ketchen, D. 2006. How Much Do High-performance Work Practices Matter? A Meta-analysis of Their Effects on Organizational Performance. *Personnel Psychology* 59(3): 501–28.

Datta, D. K., Guthrie, J. P. and Wright, P. M. 2005. Human Resource Management and Labor Productivity: Does Industry Matter? *Academy of Management Journal* 48(1): 135–45.

Delery, J. E. and Doty, D. H. 1996. Modes of Theorizing in Strategic Human Resource Management: Tests of Universalistic, Contingency, and Configurational Performance Predictions. *Academy of Management Journal* 39(4): 802–35.

FEVS. 2011. Federal Employee View Survey. http://www.fedview.opm.gov/2011/Published/

Gong, Y, Chang, S. and Cheung, S. 2010. High Performance Work System and Collective OCB: A Collective Social Exchange Perspective. *Human Resource Management Journal* 20(2): 119–37.

Gould-Williams, J. S. 2003. The Importance of HR Practices and Workplace Trust in Achieving Superior Performance: A Study of Public-Sector Organizations. **International Journal of Human Resource Management** 14(1): 28–54.

Gould-Williams, J. S. and Mohamed, R. B. 2010. A Comparative Study of the Effects of Best Practice HRM on Worker Outcomes in Malaysia and England Local Government. *International Journal of Human Resource Management* 21(5): 653–75.

Guest, D. 2011. Human Resource Management and Performance: Still Searching for Some Answers. *Human Resource Management Journal* 21(1): 3–13.

Harter, J. K., Schmidt, F. L. and Hayes, T. L. 2002. Business-Unit-Level Relationship between Employee Satisfaction, Employee Engagement, and Business Outcomes: A Meta-analysis. *Journal of Applied Psychology* 87(2): 268–79.

Herrbach, O, Mignonac, K, Vandenberghe, C. and Negrini, A. 2009. Organizational Commitment, and Voluntary Early Retirement among Late-career Managers. *Human Resource Management* 48(6): 895–915.

Huselid, M. A. 1995. The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance. *Academy of Management Journal* 38(3): 635–72.

Huselid, M. A., Jackson, S. E. and Schuler, R. S. 1997. Technical and Strategic Human Resource Management Effectiveness as Determinants of Firm Performance. *Academy of Management Journal* 40(1): 171–88.

Judd, C. M. and Kenny, D. A. 1981. Process Analysis: Estimating Mediation in Evaluation

Research. *Evaluation Review* 5(5): 602–19.

Keller, R. T. 1997. Job Involvement and Organizational Commitment as Longitudinal Predictors of Job Performance: A Study of Scientists and Engineers. *Journal of Applied Psychology* 82(4): 539–45.

Kim, S. 2012. The Impact of Human Resource Management on State Government IT Employee Turnover Intentions. *Public Personnel Management* 41(2): 257–79.

Kuvaas, B. 2008. An Exploration of How the Employee-organization Relationship Affects the Linkage between Perception of Developmental Human Resource Practices and Employee Outcomes. *Journal of Management Studies* 45(1): 1–25.

Kuvaas, B. and Dysvik, A. 2009. Perceived Investment in Employee Development, Intrinsic Motivation and Work Performance. *Human Resource Management Journal* 19(3): 217–36.

———. 2010. Exploring Alternative Relationships between Perceived Investment in Employee Development, Perceived Supervisor Support and Employee Outcomes. *Human Resource Management Journal* 20(2): 138–56.

Lawler, E. E. and Hall, D. T. 1970. Relationship of Job Characteristics to Job Involvement, Satisfaction, and Intrinsic Motivation. *Journal of Applied Psychology* 54: 305–12.

Lee, Y. and Whitford, A. 2008. Exit, Voice, Loyalty, and Pay: Evidence from the Public Workforce. *Journal of Public Administration Research and Theory* 18(4): 647–71.

Macky, K. and Boxall, P. 2007. The Relationship between High-performance Work Practices and Employee Attitudes: An Investigation of Additive and Interaction Effects. *International Journal of Human Resource Management* 18(4): 537–67.

Meier, K. J. and O'Toole, L. J. 2013. Subjective Organizational Performance and Measurement Error: Common Source Bias and Spurious Relationships. *Journal of Public Administration Research and Theory* 23(2): 429–56.

Messersmith, J., Patel, P, Lepak, D. and Gould-Williams, J. 2011. Unlocking the Black Box: Exploring the Link Between High-Performance Work Systems and Performance. *Journal of Applied Psychology* 96(6): 1105–18.

Meyer, J. P. and Smith, C. A. 2000. HRM Practices and Organizational Commitment: Test of a Mediation Model. *Canadian Journal of Administrative Sciences* 17(4): 319–31.

Meyer, J. P., Stanley, D. J., Herscovitch, L. and Topolnytsky, L. 2001. Affective, Continuance, and Normative Commitment to the Organization: A Meta-analysis of Antecedents, Correlates, and Consequences. *Journal of Vocational Behavior* 61(1): 20–52.

Niehoff, B. and Moorman, R. 1993. Justice as a Mediator of the Relationship between

Methods of Monitoring and Organizational Citizenship Behavior. *Academy of Management Journal* 36(3): 527–56.

Noe, R. A. 1986. Trainees' Attributes and Attitudes: Neglected Influences on Training Effectiveness. *Academy of Management Review* 11(4): 736–49.

O'Driscoll, M. P. and Randall, D. M. 1999. Perceived Organisational Support, Satisfaction with Rewards, and Employee Job Involvement and Organisational Commitment. *Applied Psychology: An International Review* 48 (2): 197–209

Oh, S. and Lewis, G. 2009. Can Performance Appraisal Systems Inspire Intrinsically Motivated Employees? *Review of Public Personnel Administration* 29(2): 158–67.

Organ, D.W. 1988. *Organizational Citizenship Behavior: The Good Soldier Syndrome.* Lexington, MA: D.C. Heath.

Pandey, S. K., Coursey, D. H. and Moynihan, D. P. 2004. Management Capacity and Organizational Performance: Can Organizational Culture Trump Bureaucratic Red Tape? Paper presented at the Determinants of Performance in Public Organizations: Advancing Knowledge in Public Management Conference, Cardiff University, Wales .

Pitts, D. 2009. Diversity Management, Job Satisfaction, and Performance: Evidence from U.S. Federal Agencies. *Public Administration Review* 69(2): 328–38.

Podsakoff, P. M. and MacKenzie, S. B. 1997. Impact of Organizational Citizenship Behavior on Organizational Performance: A Review and Suggestion for Future Research. *Human Performance* 10(2): 133–51.

Podsakoff, P. M. and Organ, D. W. 1986. Self-Reports in Organizational Research: Problems and Prospects. *Journal of Management* 12(4): 531–44.

Salleh, M., Amin, A., Muda, S. and Halim, M.A.S.A. 2013. Fairness of Performance Appraisal and Organizational Commitment. *Asian Social Science* 9(2): 121–28.

Settoon, R., Bennett, N. and Liden, R. 1996. Social Exchange in Organizations: Perceived Organizational Support, Leader-member Exchange, and Employee Reciprocity. *Journal of Applied Psychology* 81(3): 219–27.

Shore, L. M. and Shore, T. H. 1995. Perceived Organizational Support and Organizational Justice. in *Organizational Politics, Justice, and Support: Managing the Social Climate of the Workplace*, edited by R. S. Cropanzano and K. M. Kacmar. Westport, CT: Quorum Books.

Snape, E. and Redman, T. 2010. HRM Practices, Organizational Citizenship Behaviour, and Performance: A Multi-level Analysis. *Journal of Management Studies* 47(7): 1219–47.

Tang, T. L. P. and Sarsfield-Baldwin, L. J. 1996. Distributive and Procedural Justice as

Related to Satisfaction and Commitment. *S.A.M. Advanced Management Journal* 61(3): 25–31.

Tremblay, M., Cloutier, J., Simard, G., Chenevert, D. and Vandenberghe, C. 2010. The Role of HRM Practices, Procedural Justice, Organizational Support and Trust in Organizational Commitment and In-role and Extra-role Performance. *International Journal of Human Resource Management* 21(3): 405–33.

Wall, T. D., Michie, J., Patterson, M., Wood, S. J., Maura, S., Clegg, C. W. and West, M. 2004. On the Validity of Subjective Measures of Company Performance. *Personnel Psychology* 57(1): 95–118.

Wall, T. D. and Wood, S. J. 2005. The Romance of Human Resource Management and Business Performance, and the Case for Big Science. *Human Relations* 58(4): 429–62.

Wayne, S. J., Shore, L. M. and Liden, R. C. 1997. Perceived Organizational Support and Leadership–member Exchange: A Social Exchange Perspective. *Academy of Management Journal* 40(1): 82–111.

Wilkinson, A., Redman, T., Snape, E. and Marchington, M. 1998. *Managing with Total Quality Management, Theory and Practice*. London: Macmillan Business.

Wood, S. and De Menzies, L. 1998. High Commitment Management in the UK: Evidence from the Workplace Industrial Relations Survey, and Employers' Manpower and Skills Practices Survey. *Human Relations* 51(4): 485–515.

Wood, S., de Menezes, L. and Lasaosa, A. 2003. Family-friendly Management in Great Britain: Testing Various Perspectives. *Industrial Relations* 42(2): 221–50.

Wright, P. M. and Gardner, T. M. 2003. The Human Resource–Firm Performance Relationship: Methodological and Theoretical Challenges. In *The New Workplace: A Guide to the Human Impact of Modern Working Practices*, edited by D. Holman, T. D. Wall, C. W. Clegg, P. Sparrow, and A. Howard. Chichester, England: Wiley.

Wright, P. M., Gardner, T. M. and Moynihan, L. M. 2003. The Impact of HR Practices on the Performance of Business Units. *Human Resource Management Journal* 13(3): 21–36.

Zacharatos, A., Barling, J. and Iverson, R. D. 2005. High-performance Work Systems and Occupational Safety. *Journal of Applied Psychology* 90(1): 77–93.

Jaekwon Ko earned a doctoral degree from the Center for Public Administration and

Policy at Virginia Tech. His research interests include human resource management, organizational theory, public management, and contracting.

Aaron Smith-Walter is currently a PhD student in the Center for Public Administration & Policy (CPAP) at Virginia Tech. His research interests include citizen participation, public transportation, images of public administration in the popular media, and metropolitan planning organizations.

Received: July 11, 2013
Revised: September 9, 2013
Accepted: October 11, 2013