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Sergio Fernandez¹ and Tima Moldogaziev¹

Abstract

For more than a decade, public organizations have been adopting employee empowerment with the aim of improving performance and job satisfaction and promoting innovativeness. Our understanding of employee empowerment has been hindered by a dearth of empirical research on its uses and consequences in the public sector. Based on Bowen and Lawler's conceptualization of employee empowerment, this study explores the link between various empowerment practices and perceived performance in federal agencies. It is found that empowerment practices aimed at providing employees with access to job-related knowledge and skills and at granting them discretion to change work processes have a positive and substantively significant influence on perceived performance. Other empowerment practices geared toward providing employees with information about goals and performance and offering them rewards based on performance are found, however, to have little bearing on perceptions of performance.

Keywords

empowerment, management, performance

Employee empowerment has been a central theme of recent managerial reforms in the United States and abroad. An underlying assumption of the National Performance Review (NPR) was that the performance deficit in government was attributed not to lazy or incompetent public employees but to the elaborate and rigid system of rules and regulations that stifled creativity and innovation (Carroll, 1995; Gore, 1993; Kettl, 1994; Thompson, 2000). Accordingly, two key principles of the NPR were to cut red tape and empower employees to produce better results. Employee empowerment also figures prominently in the New Public Management reforms undertaken in the United Kingdom, Canada, Australia, and France (Kearney & Hays, 1998; Kettl, 2000; B. G. Peters, 1996; Pollitt, 1990). As B. G. Peters (1996) explained, a belief among reformers in these countries has been that "more empowered workers should be willing to work harder, share more ideas with management, and treat their clients more humanely since they are themselves

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being treated better” (p. 51).¹ Programs to empower employees in the private sector predate those in government. By the 1980s and early 1990s, many large firms, including American Express, Xerox, and Federal Express, supplanted the production line approach to service delivery (see Levitt, 1972, 1976) with an array of empowerment practices. Anecdotal as well as quantitative evidence points to the success of these programs in raising profitability and improving worker satisfaction (Bowen & Lawler, 1992, 1995; Lawler, Mohrman, & Ledford, 1995; Matheson, 2007).

Our understanding of employee empowerment has been hindered by a dearth of empirical research on its uses and consequences in the public sector. This study, which aims to fill this lacuna, is based on Bowen and Lawler’s (1992, 1995) conceptualization of empowerment as a management approach involving four practices or behaviors on the part of managers: providing employees with information about organizational goals and performance; offering employees rewards based on performance; providing employees with access to job-related knowledge and skills; and granting employees discretion to change work processes. These four empowerment practices are measured using data collected by the U.S. Office of Personnel Management (OPM). Statistical models are developed to explore the relationship between each of these empowerment practices and perceptions of performance in federal agencies. The results show that all four empowerment practices are statistically correlated with perceived performance. Importantly, only two practices—providing employees with access to job-related knowledge and skills and granting employees discretion to change work processes—have substantively significant effects on perceived performance. In addition, the effects appear to be independent and additive rather than multiplicative.

The next section offers a review of the literature on employee empowerment and its consequences. The discussion then turns to the data and methods used in the analysis. The results of the statistical analysis are then presented. The study concludes with a discussion of the findings’ implications for theory and practice and suggestions for further research on employee empowerment in the public sector.

Employee Empowerment

Despite significant progress in developing and testing the construct of employee empowerment over the past two decades, scholars have failed to reach consensus as to what employee empowerment actually means (see Conger & Kanungo, 1988; Herrenkohl, Judson, & Heffner, 1999; Spreitzer, 1995, 1996; Thomas & Velthouse, 1990). Two distinct theoretical perspectives have emerged in the literature, a managerial and a psychological one. From a managerial perspective, employee empowerment is a relational construct that describes how those with power in organizations (i.e., managers) share power and authority with those lacking it (i.e., employees; Conger & Kanungo, 1988). The intellectual origins of this construct have been traced back to McGregor’s (1960) *Theory Y* of leadership, Likert’s (1967) classification of managerial styles, and other seminal contributions to the Human Relations movement in organization theory (Herrenkohl et al., 1999). Scholars taking this perspective have focused on management practices and behaviors aimed at sharing power, information, and rewards with employees to improve results (Bowen & Lawler, 1992, 1995; Kanter, 1979).

Since the late 1980s, the psychological perspective on employee empowerment has gained in prominence. This theoretical perspective views employee empowerment as a motivational construct defined as an internal cognitive state characterized by increased intrinsic task motivation (Thomas & Velthouse, 1990) and enhanced feelings of self-efficacy (Conger & Kanungo, 1988). According to Conger and Kanungo (1988), for decades management scholars equated empowerment primarily and almost exclusively with sharing power with employees by means such as delegation and involvement in decision making (see Kanter, 1979; Kotter, 1979; Salancik & Pfeffer, 1974). They

argued, however, against such a one-dimensional view of empowerment, describing it instead as the complex motivational process of “enabling” employees to act. Adopting a psychological perspective, Conger and Kanungo defined empowerment as “a process of enhancing feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practices and informal techniques of providing efficacy information” (p. 474). This motivational process involves five stages: Stage 1, the presence of conditions leading to a psychological state of powerlessness; Stage 2, the use of empowerment strategies and techniques by managers; Stage 3, the removal of conditions leading to powerlessness and the transmission of information that enhances self-efficacy; Stage 4, a feeling of empowerment as a result of receiving and processing this information; and Stage 5, the behavioral effects of empowerment, including greater effort and persistence.

Thomas and Velthouse (1990) expanded on Conger and Kanungo’s (1988) conceptualization by identifying four intrapersonal cognitions that cause employees to experience a “feeling” of empowerment. Drawing on work redesign theory (Hackman & Oldham, 1976) and expectancy theory (Lawler, 1973), they defined empowerment as a heightened level of intrinsic task motivation or internalized commitment to a task. According to their model, an employee makes personal assessments of four aspects of a task: impact, competence, meaningfulness, and choice. Impact refers to the extent to which behavior is seen to make a difference as to whether or not a task will be accomplished. Competence refers to self-efficacy or “the degree to which a person can perform task activities skillfully when he or she tries” (p. 672). Meaningfulness is conceived in terms of how much value an employee places on accomplishing the task. Finally, choice is defined as locus of causality, referring to “the issue of whether a person’s behavior is perceived as self-determined” (p. 673). To the extent that an employee makes positive assessments of these four aspects of the task, he or she will feel a heightened level of intrinsic task motivation and therefore be empowered. Thomas and Velthouse acknowledged the influence of deliberative attempts by managers to influence these assessments, but such interventions play a peripheral role in their model of empowerment.

Bowen and Lawler (1992, 1995), who analyzed the growing use of empowerment practices in private service firms during the 1990s, developed the most well-known definition of employee empowerment. Reverting to the earlier tradition of treating empowerment as a relational construct, they defined empowerment as an “approach to service delivery” entailing various management practices aimed at sharing four organizational “ingredients” with frontline employees: “(1) information about the organization’s performance, (2) rewards based on the organization’s performance, (3) knowledge that enables employees to understand and contribute to organizational performance, and (4) power to make decisions that influence organizational direction and performance” (Bowen & Lawler, 1992, p. 32). Although Bowen and Lawler observed that sharing power and authority with frontline employees is a key ingredient of an empowering approach to management, they strongly argued that this alone is insufficient for realizing the benefits of empowerment. As they noted, “many empowerment programs fail when they focus on ‘power’ without also redistributing information, knowledge and rewards” (p. 32). Importantly, Bowen and Lawler argued that these four elements interact with each other, having a multiplicative rather than additive effect on performance. As they explain, “this [multiplicative] formula reminds managers to avoid the common effort of giving employees more discretion (power) but not the necessary support to exercise that discretion wisely” (1995, p. 74).

Spreitzer’s (1995, 1996) seminal contribution to the literature has been to weave together existing strands of empowerment theory (see also Spreitzer, de Janasz, & Quinn, 1999) to create a process theory of empowerment. Like Conger and Kanungo (1988) and Thomas and Velthouse (1990), she viewed empowerment mainly as a motivational construct evident in four cognitions: meaning, competence, self-determination (Thomas and Velthouse’s “choice”), and impact. These

four elements of psychological empowerment are argued to work additively to influence employee effectiveness and innovativeness. Central to her model of empowerment are a set of antecedents—locus of control, self-esteem, access to information, and rewards—that are said to influence the four cognitions evincing empowerment. In proposing these antecedents, Spreitzer is suggesting that for psychological empowerment to occur, some of the ingredients from Bowen and Lawler's empowerment approach—including providing information about organizational goals and performance, granting discretion, and offering rewards based on performance—must take place first. Essentially, she is redefining the relational construct of empowerment as a set of antecedents or triggers that bring about psychological empowerment. A test of her nomological model showed that the antecedents are positively linked to the four cognitions as well as two outcomes, perceived effectiveness and innovativeness.

Consequences of Empowerment

Employee empowerment has been touted as a management approach that enables businesses to increase competitiveness, innovativeness, and responsiveness to customers. In the public sector, empowerment is similarly viewed as a means for improving the quality of public services and unleashing the creative talents of public employees. Empirical findings indicate that simultaneously sharing power, information, resources, and rewards with employees improves effectiveness and productivity (Kirkman & Rosen, 1999; Lawler, Mohrman, & Ledford, 1992, 1995; Nielsen & Pedersen, 2003; Spreitzer, 1995); promotes innovativeness (Spreitzer, 1995); and increases employee job satisfaction (Kirkman & Rosen, 1999; Lawler et al., 1992, 1995), organizational commitment (Guthrie, 2001; Kirkman & Rosen, 1999; Lawler et al., 1992, 1995), and job involvement (Coye & Belohlav, 1995). Lawler et al. (1992, 1995) found that these positive effects were greater in service firms than in manufacturing firms, even though empowerment practices appear to be more prevalent in the latter than in the former.

Only a handful of empirical studies have examined the consequences of employee empowerment in the public sector. Several of these studies have found empowerment practices to be positively associated with employee job satisfaction (Kim, 2002; Lee, Cayer, & Lan, 2006; Park & Rainey, 2007; Wright & Kim, 2004). Two studies analyzing the relationship between empowerment and organizational commitment—a potential antecedent of performance—have yielded mixed results (see Park & Rainey, 2007; R. W. Perry, 2004). Lee et al. (2006) appear to have undertaken the only empirical study of empowerment and its influence on performance in the public sector. The results of their study, which was based on federal employee survey data spanning a period of 30 years, showed that empowerment had a positive but very weak association with employees' perception of organizational effectiveness.

Employee empowerment, compared with a more hierarchical and mechanistic approach to management, offers several benefits in the way of improved performance. Empowerment grants employees the flexibility and resources needed to quickly respond to a customer's particular needs and to rapidly correct defects in service delivery (Bowen & Lawler, 1992). Empowered employees, because they tend to have higher intrinsic task motivation, will exhibit increased concentration, effort, and resilience when performing a task (Kanter, 1983; Thomas & Velthouse, 1990; see also Conger & Kanungo, 1988). Sharing power, resources, and knowledge with employees also serves to increase job satisfaction and commitment, factors, which in turn positively influence individual productivity and effectiveness as well as the quality of interactions with customers (Bowen & Lawler, 1992; Spreitzer, 1995). Finally, employee empowerment promotes innovativeness, turning employees into a wellspring of novel ideas. The relaxation of controls and sharing of power grants organizational members the autonomy to act in creative and innovative ways (Bowen & Lawler, 1992; Spreitzer, 1995; Thompson, 1965). Moreover, empowerment practices provide employees

with resources and task-related knowledge, two factors that are essential for innovation (Cyert & March, 1963; Damanpour, 1991; Kanter, 1983; Rosner, 1968; Thomas & Velthouse, 1990). With regards to public sector employees, Langbein (2000) notes that discretion should allow them to make more productive use of their time and enable them to be as entrepreneurial as their private sector counterparts.

Unique characteristics of the public sector and public organizations may serve to dampen if not neutralize the beneficial effects of empowerment practices. Notwithstanding recent initiatives to measure performance in the federal government such as the Government Performance Results Act (GPRA) and the Program Assessment Rating Tool (PART), public employees experience greater goal ambiguity than their private sector counterparts (Rainey, 2003), complicating efforts to empower them by providing more information about goals and performance. Programs tying employee compensation to performance have yielded mixed results in the public sector (Kellough & Lu, 1993; Kellough & Nigro, 2002; J. L. Perry, Petrakis, & Miller, 1989) because of lack of funding for bonuses and challenges in evaluating individual performance. In addition, employees in public organizations encounter higher levels of formalization than those in the private sector (Rainey, 2003; Rainey & Bozeman, 2000). This may make it difficult for public managers to grant their subordinates ample discretion and flexibility to tailor services to the particular needs of citizens or to engage in innovative behavior. For these reasons, it is critical that public management scholars study the effectiveness of different empowerment practices in the public sector.

It is important to recognize that employee empowerment can impose costs on organizations (Bowen & Lawler, 1992, 1995). Empowered employees often work at a slower pace as they attempt to meet the particular needs of a client. Their behavior is also less consistent and uniform than that of employees operating in a hierarchical, production-line system where behavior is highly “preformed” (see Kaufman, 1960). Empowerment can also impose financial costs on an organization in the form of higher employee selection and training costs, performance data collection and reporting activities, and higher production costs from “giveaways and bad decisions” that are incurred when employees exercise undue discretion in meeting the needs of service recipients (Bowen & Lawler, 1992). In short, employee empowerment involves trade-offs between benefits and costs and therefore warrants close consideration of the organizational conditions under which it might be adopted (Bowen & Lawler, 1992, 1995).

Data and Method

The following empirical analysis examines the relationship between Bowen and Lawler’s (1992, 1995) four empowerment practices and perceived performance in federal agencies. The four empowerment practices are providing information about goals and performance (*practice 1*); offering rewards based on performance (*practice 2*); providing access to job-related knowledge and skills (*practice 3*); and granting discretion to change work processes (*practice 4*). The unit of analysis is the individual federal government employee responding to the 2006 Federal Human Capital Survey (FHCS). The model of perceived performance that is tested is

$$\text{perceived performance} = f(\text{practice 1, practice 2, practice 3, practice 4, sufficient resources, knowledge sharing, cooperation at work, physical conditions, organizational rating, supervisory status, location, minority, age}).$$

All four empowerment practices are hypothesized to be positively correlated with perceived performance. Bowen and Lawler’s (1995) proposition that these four practices interact to influence performance also will be tested.

Dependent Variable

The dependent variable, *perceived performance*, is measured using responses to the following ordinal survey indicator: “How would you rate the overall quality of work done by your work group?” The response categories range from 1 = *very poor* to 5 = *very good*.

Approximately 1% of respondents answered “very poor”; 2% answered “poor”; 13% answered “fair”; 46% answered “good”; and 39% answered “very good.” This variable is a *perceptual* measure of performance based on the ratings of *internal* stakeholders.

The common use of perceptual performance measures in management research raises the question of how closely correlated these measures are with more objective ones based on easily observable behaviors and outcomes (Bommer, Johnson, Rich, Podsakoff, & MacKenzie, 1995) and archival data (Walker & Boyne, 2006). Heneman’s (1986) meta-analysis found a relatively weak correlation ($r = .27$, not statistically significant) between perceptual and objective measures, leading him to conclude that the two are not interchangeable. Bommer et al.’s (1995) meta-analysis found an overall higher but still modest correlation between the two types of measures ($r = .30$, statistically significant), although the correlations were much higher ($r = .71$) when perceptual and objective measures of performance tapped the same dimension of performance (e.g., output).² Conversely, other studies, including Nathan and Alexander (1988), produced little if any evidence of a significant distinction between perceptual and objective measures (cited in Boomer, et al., 1995, pp. 588-589). Among public management scholars, Brewer (2005) argued that studies show that “measures of perceived organizational performance correlate positively with moderate to strong associations with objective measures of organizational performance” (p. 511). In studying the effects of politicization on federal agency performance, Lewis (2008) used PART scores, which are external measures perceived to be more objective in nature, and FHCS items, which are internal and perceptual, and found that politicization had a similarly negative effect on both types of performance indicators. In short, it is fair to conclude that although not interchangeable, perceptual measures of performance are at least moderately correlated with objective ones and can serve as a solid proxy for them, especially when the same dimension or dimensions of performance are measured.

The nature of the relationship between internal and external measures of performance must also be considered. Walker and Boyne (2006) stated that “a range of evidence demonstrates that there are positive statistically significant correlations between external and internal measures of overall performance, some in the region of $r = 0.8$ ” (p. 378). They note, however, that those findings are only achieved when measures of the same dimension of performance are used. In their own empirical analysis, they found that external and internal measures of performance had correlations ranging from .46 to .60, with the highest correlations among variables measuring technical aspects of organizational performance, such as outputs and efficiency. These findings suggest that internal measures of performance like the one used in this study are a reasonable approximation of measures based on the ratings of external stakeholders.

Independent Variables

The independent variables—*practice 1*, *practice 2*, *practice 3*, and *practice 4*—represent Bowen and Lawler’s (1992, 1995) four empowerment practices. Survey indicators from the 2006 FHCS were used to construct a summated rating scale for each of the four practices (see Appendix A). As can be seen in Appendix A, the survey items selected for each of the scales exhibit face validity and appear to be measuring the type of management behavior described by Bowen and Lawler. Next, Cronbach’s alpha tests were performed on each the four scales. The results show moderate to high levels of internal consistency, with scale reliability statistics ranging from .74 for *practice*

Table 1. Descriptive Statistics for Independent and Control Variables

Variable	Mean	SD	Minimum	Maximum
<i>Practice 1</i> (information about goals and performance)	-0.04	0.85	-2.37	1.50
<i>Practice 2</i> (rewards based on performance)	-0.05	0.91	-1.93	1.74
<i>Practice 3</i> (access to job-related knowledge and skills)	-0.03	0.84	-2.66	1.27
<i>Practice 4</i> (discretion to change work processes)	-0.03	0.79	-1.90	1.34
Sufficient resources	3.14	1.21	1	5
Knowledge sharing	3.81	1.00	1	5
Cooperation at work	4.09	0.85	1	5
Physical conditions	3.73	1.07	1	5
Organizational rating	3.67	1.11	1	5
Supervisory status	0.23	0.42	0	1
Location	0.61	0.49	0	1
Minority	0.26	0.44	0	1
Age	3.34	0.98	1	5

Note. Sample size = 189,856. Sample restricted to 154,821 valid observations, or 77% of the original sample.
Source. 2006 Federal Human Capital Survey.

3 to .88 for *practice 2*. The descriptive statistics for these variables and the control variables are shown in Table 1.

A major issue that comes forward is whether these measures of empowerment practices stand the tests of discriminant and convergent validity. The four empowerment variables were subjected to a higher order confirmatory factor analysis (CFA) to answer this question (see Appendix B). A variety of goodness-of-fit indices from the CFA support a four-factor structure involving the four empowerment variables, while rejecting a single-factor model.³ These results indicate that the measure of Bowen and Lawler's empowerment construct exhibits convergent as well as discriminant validity.

Control Variables

The model includes controls for factors that influence performance. Financial, human, and informational resources contribute to organizational performance (Meier & O'Toole, 2001; O'Toole & Meier, 1999; Pfeffer, 1997; Rainey, 2003; Rainey & Steinbauer, 1999). The model includes, therefore, the variable *sufficient resources*, a measure of respondents' perceptions of the availability of resources to get one's job done. The actual survey items used to measure the control variables are shown in Appendix C. Controls are included for other organizational constraints that can influence performance, including the extent to which employees share knowledge, the amount of cooperation among employees, and the physical conditions in the workplace (see Keenan & Newton, 1984; L. H. Peters & O'Connor, 1980; Spector, Dwyer, & Jex, 1988; Spector & Jex, 1991). To control for the degree to which employees share work-related knowledge, the variable *knowledge sharing* is included in the model. The variable *cooperation* is a measure of respondents' assessments of whether people cooperate at work to get the job done. The variable *physical conditions* is a measure of respondents' evaluations of physical conditions in the work place. These three variables should be positively correlated with perceived performance. Because respondents' perceptions of performance might be influenced by their general attitude toward their organization, the model includes the variable *organizational rating*, measured as respondents' ratings of the work place compared with other organizations.

The model includes a set of controls for characteristics of the survey respondent, including a dummy variable for whether or not the respondent has a supervisory position (*supervisory status*),

a dummy variable for whether or not the respondent works in a field office (*location*), a dummy variable for whether or not the respondent is nonwhite (*minority*), and a categorical variable for the respondent's age (*age*).

Data

The data for the analysis are derived from the 2006 Federal Human Capital Survey (FHCS) conducted by the U.S. Office of Personnel Management.⁴ The concept of employee empowerment applies particularly to frontline and lower level employees. The focus of the analysis is, therefore, on those employees at the three lowest levels of the federal bureaucracy: nonsupervisory employees, team leaders, and supervisors; managers and senior executives are excluded from the analysis. The 2006 FHCS contains 189,856 observations for nonsupervisory employees, team leaders, and supervisors. Of that number, 154,821 or 77% are included in the final empirical analysis, with the remaining observations dropped due to missing data on the dependent, independent and/or control variables. The descriptive statistics for these remaining observations are shown in Appendix D. The statistics fail to show any meaningful differences between the observations included in the analysis and those that were dropped.

Model Selection and Fit Tests

The variable *perceived performance* is a limited dependent variable measured using an ordinal survey indicator. Using ordinary least squares (OLS) regression to estimate this type of dependent variable can result in biased coefficients and misleading results (Long, 1997; Long & Freese, 2005; McKelvey & Zavoina, 1975; Winship & Mare, 1984). Thus, three sets of competing equations using ordered logit model (OLM), ordered probit model (OPM), and multinomial logit model (MNLM) regression were estimated. The conventional fit statistics such as the Aikake's information criterion (AIC) and the Bayesian information criterion (BIC) scalars suggest that OLM provides a better fit for the data (Table 2). The absolute value of the difference between these statistics for OLM in contrast to both OPM and MNLM specifications is large; the OLM estimates are significantly and sufficiently smaller (see Long, 1997). Similarly, the likelihood ratio χ^2 coefficient for the OLM suggests a better fit than the ordered probit and multinomial logit specifications of the dependent variable. Finally, the four R^2 coefficients reported (McFadden's, Cox-Snell's, McKelvey and Zavoina's, and Cragg-Uhler's) indicate that the multinomial logit and ordered logit functional forms of *perceived performance* produce slightly better results than the OPM model. In short, the evidence at hand from generic tests of fit appears to point to the OLM model as the preferred specification, even though the R^2 scores are not particularly helpful in tipping the scales in favor of any single specification.

The OLM and OPM model estimations are based on the rationale of proportional odds or parallel regression equations. These two models assume that the underlying intervals between the closest categories of the outcome variable are equal. Therefore, it is assumed that a change in the explanatory variable results in an identical slope coefficient regardless of the value of an outcome category. With coefficients of the effects unchanged, the only statistic that changes is the intercept. A violation of the assumption of parallel regression when using OLM or OPM model estimations may produce erroneous results and lead to incorrect conclusions, indicating the need to use a multinomial logit specification (Long, 1997; Long & Freese, 2005). Consequently, the next step in identifying the proper fit for the data is determining whether the OLM estimates (the stronger of the two ordered models) violate the fundamental assumption of parallel regression.

The *Brant* test of parallel regression assumption is run to obtain such evidence. The results suggest that the four empowerment variables taken together violate the assumption of parallel

Table 2. Model Estimates and Test of Fit, Dependent Variable = Perceived Performance, $N = 154,821$

Variable Description	Ordered Logit	Ordered Probit	Multinomial Logit
<i>Practice 1</i> (information about goals and performance)	0.071*** (6.12)	0.041*** (6.71)	-0.628*** (-8.22)
<i>Practice 2</i> (rewards based on performance)	0.038*** (4.29)	0.028*** (5.56)	-0.467*** (-5.22)
<i>Practice 3</i> (access to job-related knowledge and skills)	0.456*** (40.50)	0.247*** (39.28)	-0.827*** (-10.97)
<i>Practice 4</i> (discretion to change work processes)	0.170*** (14.33)	0.103*** (15.38)	-0.582*** (-5.69)
Sufficient resources	0.038*** (7.21)	0.024*** (8.06)	-0.132*** (-3.32)
Knowledge sharing	0.382*** (57.83)	0.211*** (57.87)	-0.480*** (-14.27)
Cooperation at work	0.919*** (112.31)	0.488*** (110.20)	-1.305*** (-31.06)
Physical conditions	0.037*** (6.92)	0.022*** (7.05)	-0.112*** (-3.81)
Organizational rating	0.295*** (40.53)	0.164*** (40.41)	-0.744*** (-12.88)
Supervisory status (1 = supervisor)	0.029* (2.2)	0.022** (2.88)	-0.426*** (-3.29)
Location (1 = field office)	-0.167*** (-15.30)	-0.096*** (-15.28)	0.144 (2.15)
Minority (1 = non-White)	-0.110*** (-9.13)	-0.062*** (-9.01)	0.178* (2.15)
Age category	0.111*** (20.36)	0.065*** (20.73)	-0.116*** (-2.77)
AIC	259330.8	260035.2	259517.2
BIC	259499.9	260204.3	260074.4
BIC'	-78800.6	-78096.3	-78226.2
Likelihood ratio χ^2	78956.0	78251.6	78847.6
McFadden's R^2	.233	.231	.233
ML (Cox-Snell) R^2	.399	.397	.399
McKelvey and Zavoina's R^2	.47	.47	—
Cragg-Uhler's (Nagelkerke) R^2	.45	.447	.45

Note. AIC = Akaike's information criterion; BIC = Bayesian information criterion; ML = maximum likelihood.

* $p < .05$. ** $p < .01$. *** $p < .001$.

regression. When taken individually, only *practice 3* passes the *Brant* test, with the other three variables failing this test quite significantly ($p < .001$). None of the control variables in the model pass the parallel regression test either. The overall model fails the test with a $\chi^2_{df=39}$ coefficient of 1344.37, hence indicating that a multinomial specification should be selected instead of the OLM. Furthermore, to relax the parallel regression assumption employed by a traditional OLM, an omnibus likelihood ratio test for the generalized ordered logit (GOLM) constrained and unconstrained models is run. The likelihood ratio test for proportional odds shows that the model fails the omnibus test ($\chi^2_{(LR; df=39)} = 1682.78; p < .001$). In short, these results point to the multinomial model of *perceived performance* as the best model specification.⁵

Results

The results of the empirical analysis are presented in this section. In the multinomial regression model, the nonlinear probability of an outcome to occur, that is, $y = m$ given \mathbf{x} is

$$\Pr(y = m | \mathbf{x}_i) = \frac{\exp(\mathbf{x}_i \beta_m)}{\sum_{j=1}^J \exp(\mathbf{x}_i \beta_j)}, \quad \text{where } \beta_1 = 0,$$

where, $\mathbf{x}\beta$ represents the model equation; in this case the dependent variable is *perceived performance*.

Table 3. Logit Coefficients for Multinomial Logit Model, Dependent Variable = Perceived Performance

Comparison	Statistic	Logit Coefficient for Dimensions of Empowerment			
		Practice 1 (information about goals and performance)	Practice 2 (rewards based on performance)	Practice 3 (access to job-related knowledge and skills)	Practice 4 (discretion to change work processes)
VP|G	$\beta_{(VP|G)}$	-0.628	-0.467	-0.827	-0.582
	$\exp(\beta_{(VP|G)})$	0.534	0.627	0.437	0.559
	z	-8.219	-5.222	-10.972	-5.688
	p	.001	.001	.001	.001
P|G	$\beta_{(P|G)}$	-0.231	-0.249	-0.536	-0.227
	$\exp(\beta_{(P|G)})$	0.794	0.780	0.585	0.797
	z	-6.211	-6.760	-14.686	-5.074
	p	.001	.001	.001	.001
F|G	$\beta_{(F|G)}$	-0.122	-0.086	-0.299	-0.180
	$\exp(\beta_{(F|G)})$	.885	.917	.741	.835
	z	-7.154	-5.893	-18.026	-9.618
	p	.001	.001	.001	.001
VG|G	$\beta_{(VG|G)}$	-0.004	0.003	0.375	0.132
	$\exp(\beta_{(VG|G)})$	0.996	1.003	1.455	1.142
	z	-0.277	0.294	26.422	9.354
	p	.782	.769	.001	.001

Note. Perceived performance (five-choice outcome): VP = very poor; P = poor; F = fair; G = good (comparison category); VG = very good. β is the logit coefficient; $\exp(\beta)$ is the factor change; z is the z-statistic; p is the significance level.

The results of the MNLM, Model 3, show that each of the four empowerment practices is statistically correlated with *perceived performance* ($p < .001$). The multinomial logit coefficients presented in Table 3 are in the anticipated directions. Generally, for every one unit increase in any one of the four empowerment variables, the probability of obtaining a response of “very poor,” “poor,” and “fair” decreases compared with the probability of obtaining a response of “good,” the comparison category. Conversely, for every one unit increase in any one of the four empowerment variables, the probability of obtaining a response of “very good” increases compared with the probability of obtaining a response of “good.” Importantly, the substantive effects of *practice 1* and *practice 2* are very weak, whereas those of *practice 3* and *practice 4* are much stronger. This is illustrated graphically in Figures 1 through 4, which plot the predicted levels of *perceived performance* across each of the four empowerment variables, with all other variables held constant at their mean values (also see Table 4).⁶

Figure 1 plots the levels of *perceived performance* across *practice 1*, providing information about goals and performance. It illustrates that the predicted levels of category “good” increase by about 0.03 when moving from the lowest level of *practice 1* to the highest. In an almost similar magnitude but opposite direction, the predicted levels of outcome “fair” decrease by about 0.03 for the same range of *practice 1*. Although these changes are statistically significant, their magnitude is close to zero. The lines for the other response categories are flat, indicating virtually no change in the predicted levels of those outcomes when moving across the range of *practice 1*. These results provide little evidence of any substantive effects of *practice 1* on *perceived performance*.

Figure 2 plots the predicted levels of *perceived performance* across *practice 2*, offering rewards based on performance. The predicted levels of category “very good” increase slightly by about 0.02 when moving from the lowest level of *practice 2* to the highest. The predicted levels of

Table 4. Discrete Change in the Probability of Perceived Performance for Multinomial Logit Model (All Other Variables Held at Mean Values)

Variable	Change	$\bar{\Delta}$ Mean	VP	P	F	VG	G
Overall	$P(\hat{Y})$ at mean	—	.000	.002	.079	.329	.589
Practice 1 (information about goals and performance)	Δ Range	.02	-.00	-.00	-.04	.01	.03
	ΔI	.00	-.00	-.00	-.01	.00	.01
	$M\Delta$	.00	-.00	-.00	-.01	.00	.01
Practice 2 (rewards based on performance)	Δ Range	.01	-.00	-.00	-.02	.01	.01
	ΔI	.00	-.00	-.00	-.01	.00	.00
	$M\Delta$	.00	-.00	-.00	-.01	.00	.00
Practice 3 (access to job-related knowledge and skills)	Δ Range	.13	-.00	-.01	-.15	.32	-.16
	ΔI	.04	-.00	-.00	-.03	.09	-.06
	$M\Delta$	.04	-.00	-.00	-.03	.09	-.06
Practice 4 (discretion to change work processes)	Δ Range	.04	-.00	-.00	-.06	.11	-.05
	ΔI	.01	-.00	-.00	-.02	.03	-.02
	$M\Delta$	.01	-.00	-.00	-.02	.03	-.02

Note. Perceived performance (five-choice outcome): VP = very poor; P = poor; F = fair; G = good (comparison category); VG = very good. $\bar{\Delta}$ mean is the average absolute discrete change; Δ Range is change from the minimum to the maximum; ΔI is the centered change of I around the mean; $M\Delta$ is the centered marginal change around the mean.

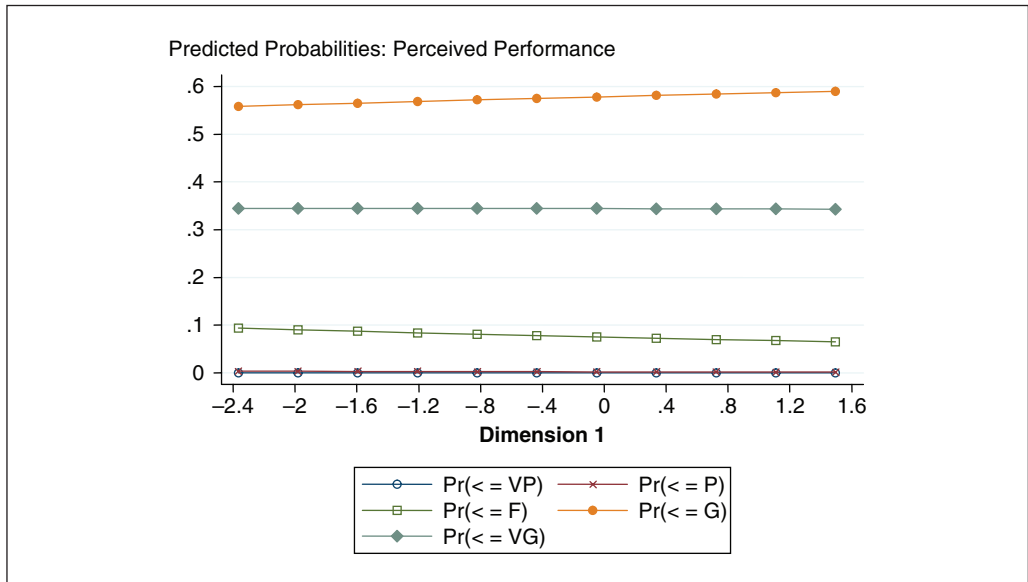


Figure 1. Predicted levels of perceived performance, empowerment Practice 1 (providing information about organizational goals and performance)

Note. Response categories for dependent variable are labeled VP = very poor, P = poor, F = fair, G = good, and VG = very good.

category “fair” decrease slightly by about 0.02 when moving across the range of *practice 2*. The other response categories exhibit lines that are flat. As is the case with *practice 1*, the effects of *practice 2* on perceived performance, although statistically significant, are close to nil.

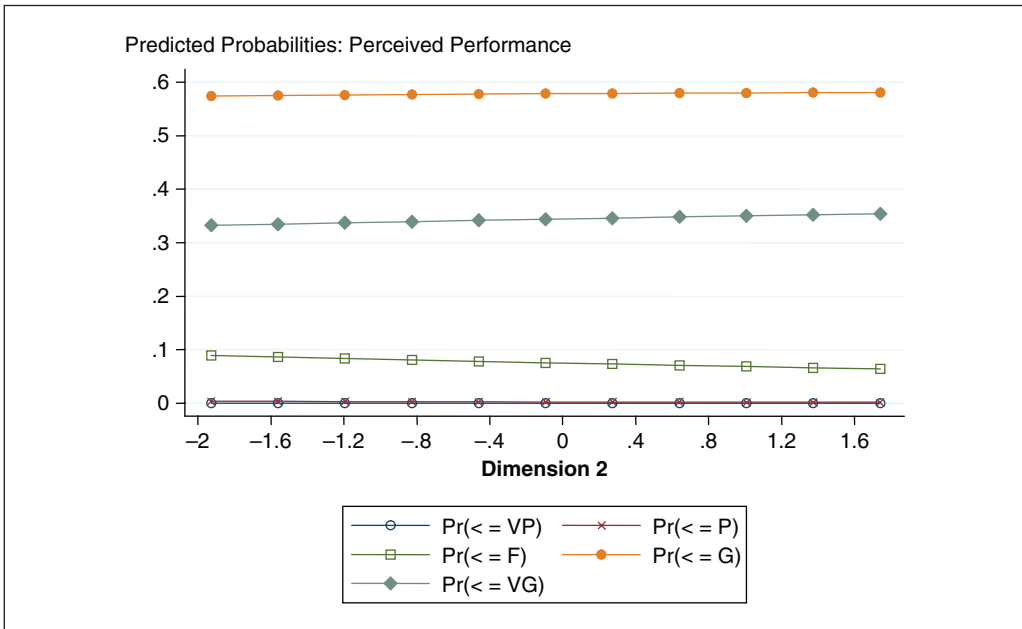


Figure 2. Predicted levels of perceived performance, empowerment Practice 2 (offering rewards based on performance)
 Note. Response categories for dependent variable are labeled VP = very poor, P = poor, F = fair, G = good, and VG = very good.

Figure 3 plots the predicted levels of *perceived performance* across *practice 3*, providing access to job-related knowledge and skills. *Practice 3* has a statistically significant coefficient and the largest substantive effect from among the four dimensions of empowerment. The graph shows that the predicted levels of category “very good” increase very sharply by about 0.30 when moving from the lowest level of *practice 3* to the highest. At the same time, the predicted probabilities for categories “good” and “fair” decrease by about 0.15 when moving across the range of *practice 3*. The changes in categories “very poor” and “poor” are statistically significant but substantively close to zero.

The predicted levels of *perceived performance* across *practice 4*, granting discretion to change work processes, can be observed in Figure 4. Increases in *practice 4* result in higher predicted levels of category “very good.” Moving from the lowest levels of *practice 4* to the highest levels increases the value of category “very good” by about 0.12. Conversely, moving across the range of *practice 4* results in a decrease of about 0.06 for categories “good” and “fair.” These results are statistically as well as substantively significant. The influence of *practice 4* on categories “very poor” and “poor,” however, is close to nil.

To assist in the interpretations of the MNLM results, Figure 5 shows a plot of odds ratio coefficients for the five categories of *perceived performance* by each dimension of empowerment. As *practice 1* and *practice 2* have virtually no substantive effect on the dependent variable, the coefficients for the remaining two empowerment practices are discussed. For a standard deviation increase in *practice 3*, providing access to job-related knowledge and skills, the odds of obtaining a response of “very poor”, “poor” and “fair” are lower compared with the comparison category “good.” At the same time, a standard deviation increase in *practice 3* results in higher odds of obtaining a response of “very good” compared with the comparison category “good.” More

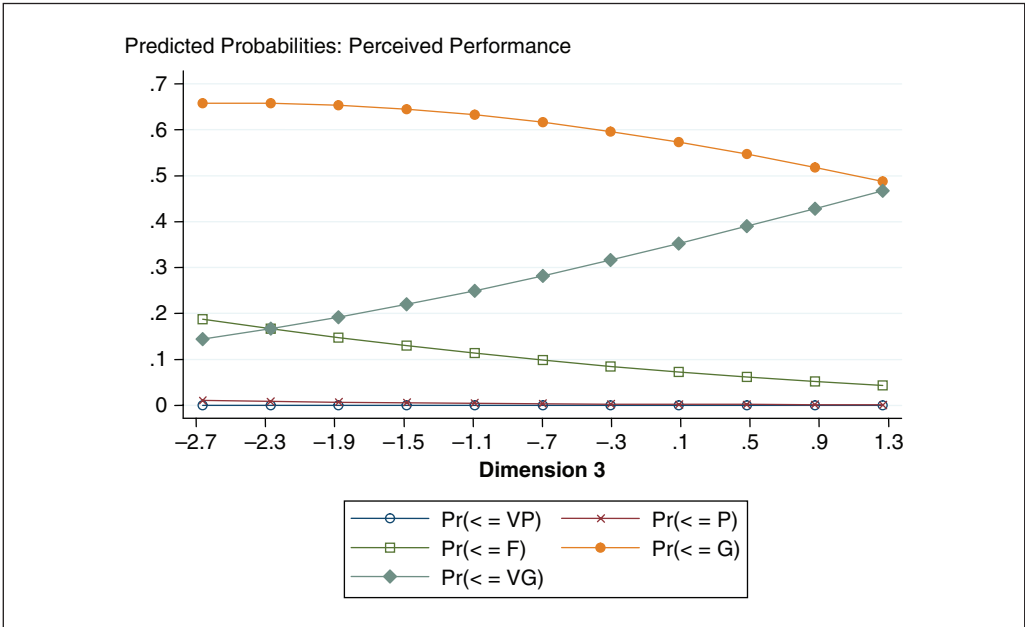


Figure 3. Predicted levels of perceived performance, empowerment Practice 3 (providing access to job-related knowledge and skills)
 Note. Response categories for dependent variable are labeled VP = very poor, P = poor, F = fair, G = good, and VG = very good.

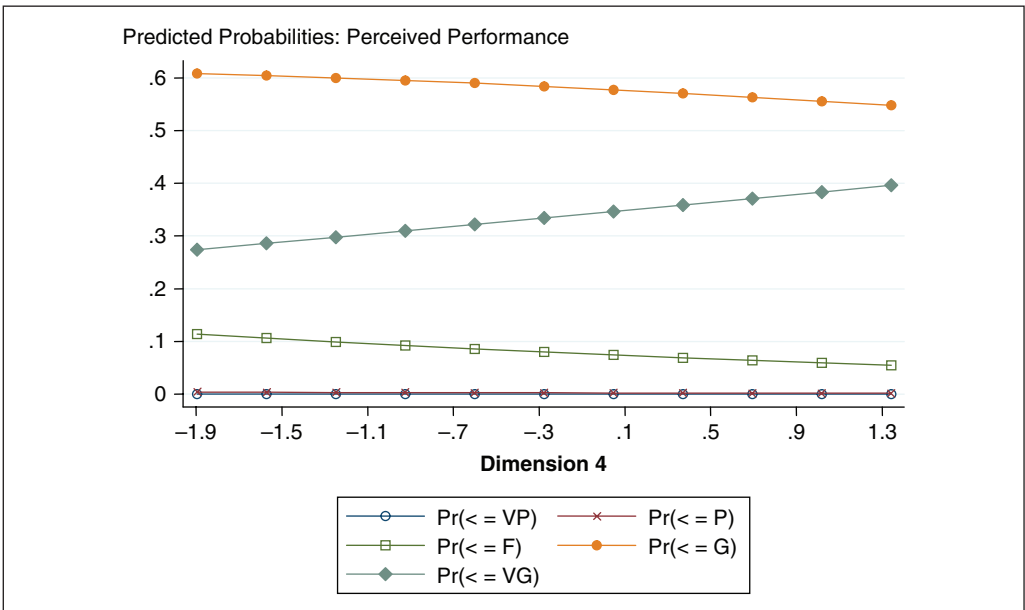


Figure 4. Predicted levels of perceived performance, empowerment Practice 4 (granting discretion to change work processes)
 Note. Response categories for dependent variable are labeled VP = very poor, P = poor, F = fair, G = good, and VG = very good.

Perceived Performance: 1 = Very Poor; 2 = Poor; 3 = Fair; 4 = Good; 5 = Very Good.											
Factor Change Scale Relative to Category 4 = Good.											
	0.41	0.47	0.55	0.64	0.74	0.86	1	1.16	1.35	1.57	1.82
practice 1			1			2	3	54			
practice 2				1		2	3	45			
practice3	1			2		3		4		5	
practice 4			1			2	3	4		5	
	-0.9	-0.75	-0.6	-0.45	-0.3	-0.15	0	0.15	0.3	0.45	0.6
Logit Coefficient Scale Relative to Category 4 = Good.											

Figure 5. Odds ratio plot of coefficients for the multinomial logit model (MNL) specification of job performance, four empowerment practices

specifically, a standard deviation increase in *practice 3* increases the odds of “good” occurring rather than “very poor,” “poor,” and “fair” by a factor of 2.3, 1.7, and 1.3, respectively, with all other variables held constant ($p < .001$). A one standard deviation increase in *practice 3* increases the odds of “very good” occurring rather than “good” by a factor of 1.5, all other variables held constant ($p < .001$).

With regards to *practice 4*, granting discretion to change work processes, a one standard deviation increase in this dimension of empowerment decreases the odds of obtaining a response of “very poor,” “poor,” and “fair” compared with the comparison category “good.” At the same time, the odds of obtaining a response of “very good” are greater compared with the comparison category “good.” More specifically, a standard deviation increase in *practice 4* decreases the odds of “very poor,” “poor,” and “fair” occurring rather than “good” by a factor of 1.8, 1.3, and 1.2, respectively, with all other variables held constant ($p < .001$). Conversely, a one standard deviation increase in *practice 4* increases the odds of “very good” occurring rather than “good” by a factor of 1.2, all other variables held constant ($p < .001$). In short, the results illustrated in Figure 5 show that *practice 3* and *practice 4* have the two largest substantive effects on *perceived performance*, whereas the other two empowerment practices appear to have almost no substantive effect.

The coefficients for the control variables are generally in the anticipated direction. The variables *organizational rating*, *knowledge sharing*, *cooperation at work*, *physical conditions*, and *sufficient resources* are positively associated with *perceived performance*, with the first three of these variables having the strongest substantive effects, based on their fully standardized coefficients in the OLM and OPM specifications (not shown). The variable *knowledge sharing* and *practice 3* both have fully standardized coefficients of about 0.15, whereas *cooperation at work* has the highest fully standardized coefficient (0.30) in the OLM and OPM specifications. Importantly, both *knowledge sharing* and *cooperation at work*—variables that appear to capture horizontal communication—have fully standardized coefficients greater than *practice 1*, which represents downward flow of information about goals and performance. As far as the flow of communication is concerned, federal agencies benefit more from the lateral flow of ideas and information among workers than from downward communication, which has been the primary focus of recent performance management reforms, including the Government Performance and Results Act (GPRA) and the employee performance management program developed by OPM. The benefits of

horizontal communication for performance include allowing units within the organization to mutually adjust in order to achieve better coordination (Mintzberg, 1979), and promoting the cross-fertilization of ideas that lead to new and more viable innovations (see Aiken & Hage, 1971; Kanter, 1983). The variables *physical conditions* and *sufficient resources*, although statistically significant, appear to have very small substantive effect on perceptions of performance. The physical conditions in the workplace may be a stronger predictor of work-related attitudes, such as job satisfaction, as some of the literature on that topic suggests (Spector, 1997).

It was found that the four empowerment variables have independent additive effects on *perceived performance*. Bowen and Lawler (1995) argue that the effects of these four empowerment practices should be multiplicative rather than additive. To test for this interaction effect, a multiplicative term—representing the product of *practice 1*, *practice 2*, *practice 3*, and *practice 4*—was created and inserted in the OLM. The multiplicative term failed to achieve statistical significance ($p = .46$, not shown). Moreover, the goodness-of-fit statistics for the OLM remains stable when the multiplicative term is added. These results fail to support the proposition that the four empowerment practices interact to influence performance.

Discussion

The empirical analysis explored the relationship between different empowerment practices and performance in federal agencies. All four of Bowen and Lawler's (1992, 1995) empowerment practices were found to be positively correlated with employee perceptions of performance. Importantly, only two of these empowerment practices—providing access to job-related knowledge and skills (*practice 3*) and granting discretion to change work processes (*practice 4*)—have substantively significant effects on *perceived performance*. The practice of granting greater authority and discretion to frontline employees has been so closely associated with the concept of empowerment that the two have become synonymous in the minds of many experts and practitioners. As the literature indicates, discretion improves performance by giving employees the ability to quickly correct errors in service delivery, granting them the flexibility to tailor services to the particular needs of clients, and giving them the autonomy to act in creative ways. Granting discretion to frontline public employees does not mean that they use their newfound authority. Civil service reforms in some jurisdictions, such as the State of Georgia, have moved toward greater use of at will employment, removing some of the traditional protections offered to public employees. Under such conditions, public employees may become risk averse and fail to exercise discretion for fear of punishment for failed innovations.

Granting discretion is not, however, the only practice involved in empowering employees or even the most effective practice when it comes to improving performance. The results show that offering employees opportunities to gain job-related knowledge and skills has the largest substantive effect on perceptions of performance. Training and development can serve as pathways for diffusion of innovations, as employees learn about and introduce ideas applied successfully in other organizations. Employees who are more knowledgeable and highly skilled are also better able to diagnose technical problems and devise solutions to them. It is important to note that empowerment *practice 3* and *practice 4* have independent additive effects on *perceived performance*, meaning that any one of these empowerment practices alone can be used to improve performance. However, it is the manager who shares authority and increases access to job-related knowledge and skills that takes full advantage of the benefits of employee empowerment.

Empowerment practices aimed at providing information about goals and performance (*practice 1*) and at offering rewards based on performance (*practice 2*) appear to be lacking in effectiveness when adopted in federal agencies. Although these variables achieve statistical significance, they fail to have a meaningful substantive effect on *perceived performance*.

Because of greater goal ambiguity in public organizations, goals in federal agencies might not be sufficiently clear and specific to increase effort and improve performance. Another possible explanation for this finding involves employee reactions to goals and performance feedback. Goals and performance feedback are often used in place of rules to coordinate and control behavior in organizations (Mintzberg, 1979). Efforts to control employees this way may constrain behavior and prevent employees from trying innovative solutions to problems. Also, if humans for the most part are retrospectively rational, then efforts to control them through goal setting and performance feedback can encourage the deviant behavior those practices are expressly aimed at discouraging, thereby offsetting any gains in performance derived from using this empowerment practice.⁷

Several factors may contribute to the ineffectiveness of offering rewards based on performance as an empowerment practice. Research suggests that financial rewards are not as effective as intrinsic ones for improving employee motivation and effort in the public sector (J. L. Perry, Mesch, & Paarlberg, 2006). From an expectancy theory perspective (Vroom, 1964), financial rewards in federal agencies may lack sufficient valence and thus fail to increase motivation. Also, as stated above, pay-for-performance schemes in the federal bureaucracy have failed to achieve the desired results, in part because of inadequate funding to cover all of the rewards due to employees. Hence, from the perspective of expectancy theory, this practice fails to motivate, but in this case, because of the low expectancy that a certain level of achievement will be rewarded.

It was found that some of the control variables in the model have fully standardized coefficients as large as or larger than the four empowerment variables. This begs the question, how much of a real effect do empowerment practices have on perceived performance? Hierarchical regression is used to address this question. The full MNLM specification with all the control variables has a Cox–Snell's R^2 and Cragg–Uhler's R^2 of .40 and .45, respectively. An estimation of a restricted MNLM specification with only the four empowerment variables yields a Cox–Snell's R^2 and Cragg–Uhler's R^2 of .29 and .33, respectively. The combined substantive effect of empowerment practices is sizeable, therefore, with the four empowerment variables together accounting for about one third of the variance in *perceived performance*. Nevertheless, the absolute value of the difference between the likelihood ratio coefficient for the full and restricted MNLM specifications indicates that the control variables add additional explanatory strength and should be included in the model ($p < .001$).

One possible concern is that simultaneity is biasing the results regarding the effect of empowerment practices on perceived performance. Specifically, there could be a simultaneous relationship between *practice 4* and perceived performance, as discretion may be offered as a reward to employees who perform well. The presence of such a simultaneous relationship could bias the coefficients and t scores for the other independent variables in the model. To explore this bias, models were estimated without *practice 4*. The results show no meaningful difference in the coefficients and levels of statistical significance for the other three empowerment variables: all continue to have positive and statistically significant coefficients and virtually the same substantive effect on the dependent variable. If simultaneity is indeed present in the model, the bias does not appear to be influencing the general pattern of results in a meaningful way.

It was noted previously that the 2006 FHCS includes responses from federal employees in five levels of the bureaucracy, from senior executives to nonsupervisory employees. An MNLM estimation using this full sample of respondents provides remarkably similar results to those reported above from a truncated sample of only nonsupervisory employees, team leaders, and supervisors. The choice was made to base the analysis on the truncated sample for theoretical reasons. Employee empowerment, according to Bowen and Lawler (1995), is a management approach aimed at pushing power, information, resources, and rewards *down* the hierarchy.

Conclusion

Employee empowerment involves a variety of practices aimed at sharing power, information, and resources with frontline employees. Since the 1990s, public as well as private organizations have adopted this management approach with the aim of improving performance and promoting innovativeness. Our understanding of empowerment has been hindered by a dearth of empirical research on its uses and consequences in the public sector. Bowen and Lawler's (1992, 1995) multidimensional definition of empowerment was used in this study to examine the relationship between different empowerment practices and perceived performance in federal agencies. It was found that certain empowerment practices, such as providing employees with job-related knowledge and skills and granting them greater discretion, positively influence employee perceptions of performance. On the other hand, empowerment practices aimed at rewarding employees based on their performance and providing them with more information about organizational goals and performance appear to have no meaningful influence on perceived performance. Effective use of employee empowerment hinges, therefore, on managers' knowledge of the array of empowerment practices available to them and the impact of these different practices on performance.

The dependent variable, being a perceptual and global measure of performance, points to two limitations of this study. Although perceptions of internal stakeholders are an important source of information about performance, relying on such perceptions represents only one of various approaches to evaluating organizational effectiveness (Rainey, 2003). Additional analysis is needed to explore the relationship between empowerment practices and performance as perceived by external stakeholders, including political overseers and service recipients. In addition, the fact that the FHCS provides only a single measure of overall performance precludes an analysis of the trade-offs between different aspects of performance that might occur whenever empowerment is used. Employee empowerment has been shown to improve the quality of services and the satisfaction of service recipients, but these gains might come at the expense of work delays and lack of uniformity in services rendered to clients. Uniformity is especially important in the public sector, as it helps to promote fairness. Future research is needed to analyze the influence of empowerment practices on a broad range of performance measures in the public sector.

Another limitation of the study is that the results could be potentially susceptible to common method bias since all the data are self-reported data and gathered from a single survey. Common method bias is generally believed to produce artificially inflated correlations (Crompton & Wagner, 1994), although in some cases the bias can also deflate correlations (Cote & Buckley, 1988; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The Harman single factor test produced a two-factor solution (unrotated). In addition, the results of a CFA of the survey items used to measure the four empowerment practices supported a four factor structure; more importantly, it indicated that a single factor model could not provide a significant fit for data as it failed every single test for goodness-of-fit. These results, although not refuting the presence of common method bias, fail to produce convincing evidence that it indeed exists. Crompton and Wagner (1994) concluded that although the researchers need to be aware of possible common method biases, overall this problem appears to enjoy an undue level of attention. These authors find that on average the common method bias "is neither dominant nor absent" (Crompton & Wagner, 1994, p. 73). If indeed common method bias is present in the study, it could conceivably have inflated the fairly strong correlations between *practice 3* and *practice 4* and the dependent variable. Care should be taken, therefore, in interpreting the results of this analysis.

It was found that the empowerment practices analyzed in this study had independent additive effects on perceptions of performance. There is reason to believe that the effectiveness of these practices is moderated by the nature of the technology used at work, the degree of uncertainty in the external environment, and the employee's relationship with customers (Bowen & Lawler,

1992, 1995). Employee empowerment should work best for nonroutine or craft technologies and dynamic and competitive external environments that place a premium on flexibility. Further exploration of nonlinear relationships between empowerment and performance might very well yield fruitful results.

This study adopted the managerial approach to empowerment rather than the psychological one. The latter approach's value is recognized, however. The causal mechanism by which the different empowerment practices influence performance could very well be increased task motivation or feelings of self-efficacy, as Thomas and Velthouse (1990) and Conger and Kanungo (1988) suggest, respectively. The subordinates of managers using an empowerment approach could exert greater effort because of the intrinsic rewards derived from performing a task because they have a higher expectancy of accomplishing it. In addition, empowerment practices, especially those aimed at granting discretion and providing knowledge to employees, might improve performance by encouraging risk taking and creative rule breaking. Finally, the similarities between Bowen and Lawer's empowerment practices and Hackman and Oldham's (1976) job design model suggest the possibility that empowerment practices could improve performance through greater employee job satisfaction.

Finally, the question of whether empowerment breeds reckless rule breaking among public employees warrants further investigation. Studies have shown that public managers behave responsibly when engaging in innovative behavior (Berman & West, 1998; Borins, 2000) and seek political approval from elected officials when launching new initiatives (Golden, 1990). The potential consequences of employee empowerment for political and legal accountability remain, however, largely unexplored.

Appendix A

Measures of Employee Empowerment Practices

Practice 1 (information about goals and performance)

Survey indicators

- Managers review and evaluate the organization's progress toward meeting its goals and objectives (1 = *strongly disagree* through 5 = *strongly agree*)
- Supervisors/team leaders provide employees with constructive suggestions to improve their job performance (1 = *strongly disagree* through 5 = *strongly agree*)
- How satisfied are you with the information you receive from management on what's going on in your organization? (1 = *very dissatisfied* through 5 = *very satisfied*)

Cronbach's alpha test, mean interval covariance = .62

Cronbach's alpha test, scale reliability coefficient = .80

Practice 2 (rewards based on performance)

Survey indicators

- Promotions in my work unit are based on merit (1 = *strongly disagree* through 5 = *strongly agree*)
- Employees are rewarded for providing high-quality products and services to customers (1 = *strongly disagree* through 5 = *strongly agree*)
- Pay raises depend on how well employees perform their jobs (1 = *strongly disagree* through 5 = *strongly agree*)
- Awards in my work unit depend on how well employees perform their jobs (1 = *strongly disagree* through 5 = *strongly agree*)

Cronbach's alpha test, mean interval covariance = .87

Cronbach's alpha test, scale reliability coefficient = .87

Practice 3 (access to job-related knowledge and skills)

Survey indicators

- I am given a real opportunity to improve my skills in my organization (1 = *strongly disagree* through 5 = *strongly agree*)

(continued)

Appendix A (continued)

- The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals (1 = *strongly disagree* through 5 = *strongly agree*)
- Supervisors/team leaders in my work unit support employee development (1 = *strongly disagree* through 5 = *strongly agree*)

Cronbach's alpha test, mean interval covariance = .49

Cronbach's alpha test, scale reliability coefficient = .74

Practice 4 (granting discretion to change work processes)

Survey indicators

- Employees have a feeling of personal empowerment with respect to work processes (1 = *strongly disagree* through 5 = *strongly agree*)
- How satisfied are you with your involvement in decisions that affect your work? (1 = *very dissatisfied* through 5 = *very satisfied*)

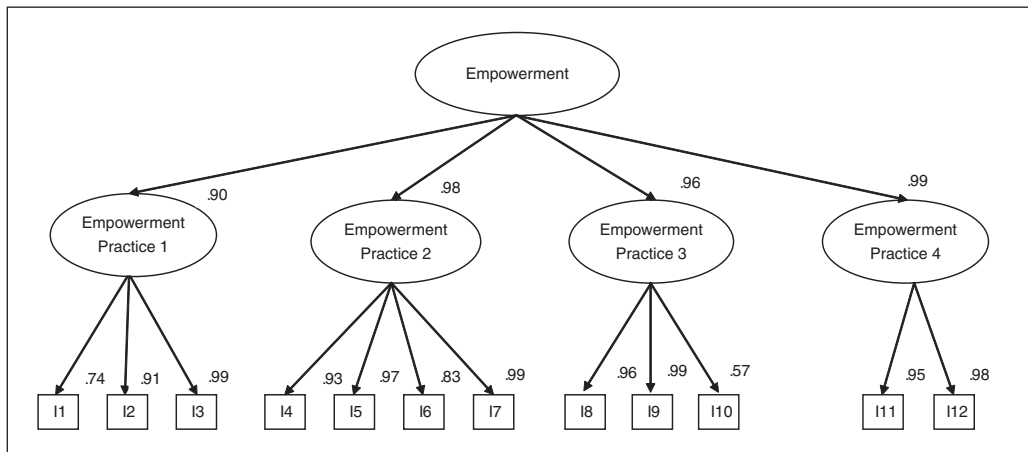
Cronbach's alpha test, mean interval covariance = .74

Cronbach's alpha test, scale reliability coefficient = .77

Source. 2006 Federal Human Capital Survey.

Appendix B

Higher Order Confirmatory Factor Analysis, Employee Empowerment



Appendix C

Measures of Control Variables

Sufficient resources

- "I have sufficient resources to get my job done" (1 = *strongly disagree* through 5 = *strongly agree*)

Knowledge sharing

- "Employees share job knowledge with each other" (1 = *strongly disagree* through 5 = *strongly agree*)

Cooperation at work

- "The people I work with cooperate to get the job done" (1 = *strongly disagree* through 5 = *strongly agree*)

Physical conditions

"Physical conditions (e.g., noise level, temperature, lighting, cleanliness in the workplace) allow employees to perform their jobs well" (1 = *strongly disagree* through 5 = *strongly agree*)

(continued)

Appendix C (continued)

Organizational rating

- "I recommend my workplace as a good place to work" (1 = strongly disagree through 5 = strongly agree)

Supervisory status

- Respondent's supervisory status (1 = middle manager or supervisor, 0 = nonsupervisory)

Location

- Respondent's work location (1 = field office, 0 = headquarters)

Minority

- Respondent's race (1 = non-White, 0 = White)

Age

- Respondent's age in years (1 = 26-29; 2 = 30-39; 3 = 40-49; 4 = 50-59; 5 = 60-69)

Source. 2006 Federal Human Capital Survey.

Appendix D

Descriptive Statistics for Observations With Missing Values

Variable	Mean	SD	Minimum	Maximum
Practice 1 (information about goals and performance)	0.00	0.85	-2.15	1.53
Practice 2 (rewards based on performance)	0.00	0.92	-1.47	2.02
Practice 3 (access to job-related knowledge and skills)	0.00	0.82	-2.30	1.34
Practice 4 (granting discretion to change work processes)	0.00	0.79	-1.56	1.49
Sufficient resources	3.12	1.22	1	5
Knowledge sharing	3.71	1.09	1	5
Cooperation at work	3.97	0.94	1	5
Physical conditions	3.64	1.14	1	5
Organizational rating	3.45	1.19	1	5
Supervisory status	0.10	0.31	0	1
Location	0.59	0.49	0	1
Minority	0.31	0.46	0	1
Age	3.22	1.04	1	5

Note. Sample size = 189,856. A total of 35,035 observations with missing data, or 23% of the original sample.

Source. 2006 Federal Human Capital Survey.

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Notes

1. Ironically, employee empowerment has at times been adopted in concert with other reforms such as downsizing and privatization that signal dissatisfaction and mistrust of public employees and pose a threat to public sector employment (Barzelay, 2001).
2. The fact that only 3 of 50 samples in Bommer et al. (1995) allowed for comparisons based on the same dimension of performance likely introduced measurement error and served to deflate the overall correlation that was found.

3. A higher order CFA was performed to assess the discriminant and convergent validity of the four-dimensional definition of employee empowerment. Multiple ordinal survey items shown in Appendix A were used to measure the four empowerment practices. As seen in Appendix B, each of the survey items loaded strongly and in the anticipated direction with the corresponding factor (i.e., empowerment practice; $p < .001$). Those four factors, in turn, have very strong positive correlations with a second-order factor representing the underlying construct of employee empowerment ($p < .001$). These results suggest there are four distinct dimensions to employee empowerment as suggested by Bowen and Lawler, thus demonstrating discriminant validity. Additionally, the strong correlations between each of the four empowerment practices and the second-order factor offer strong evidence of convergent validity. The statistics for several goodness-of-fit indices support this four-factor model of empowerment. The statistics for the comparative fit index (CFI), which is minimally affected by sample size, is .94, indicating a good fit for the four-factor model (Fan, Thompson, & Wang, 1999). The *Jöreskog & Sörbom* goodness-of-fit index of .93 also suggests a good model fit. The normed fit index (NFI) statistic of .94 and the root mean square error of approximation (RMSEA) of .09 both point to an acceptable fit for the four-factor model (Schumacker & Lomax, 2004). Complex models are more likely to generate better fit statistics than parsimonious ones. It is recommended therefore that models be subjected to goodness-of-fit measures that penalize for lack of parsimony. The model with a four-factor structure has parsimony ratio (PRATIO) and parsimony normed fit index (PNFI) statistics of .76 and .71, both of which are indicative of a reasonably parsimonious fit. It should be noted that the chi-square test results reject the four-factor model ($p < .01$). Large sample sizes like the one used in this CFA are much more likely to result in Type II errors. Suggests, therefore, discounting the chi-square results if other fit statistics support a model with such a large sample size.

In contrast to this evidence favoring a four-factor model of employee empowerment, the higher order CFA results reject a model with a one-factor structure. The CFI and NFI statistics for a one-factor model fail to reach the .90 cutoff point; both are only .88. And the RMSEA statistic (.12) is above the conventional cutoff for even an adequate model fit (Schumacker & Lomax, 2004). In addition, a comparison of the four-factor and one-factor models, in terms of their Akaike information criterion (AIC) statistics, favors the former over the latter. The lower AIC statistic for the four-factor model (67144.82) is considerably lower than the AIC statistic for the one-factor model (125282.98), indicating a significantly better model fit (Burnham & Anderson, 2004; Long, 1997).

4. The 2006 FHCS was administered to more than 200,000 federal employees working for 82 cabinet-level and smaller independent agencies. The survey respondents held positions at five levels, ranging from the nonsupervisory level to the level of Senior Executive Service. OPM used a stratified sampling technique to develop statically valid samples from each of the agencies.
5. Estimating the model using either OLM and OPM regression causes no meaningful difference in the results of the MNLM regression.
6. Because of limited variance in the dependent variable, we recoded the survey item so that response categories 1 (*very poor*), 2 (*poor*), and 3 (*fair*) are zero and categories 4 (*good*) and 5 (*very good*) are one. This recoding allows one to essentially distinguish between perceptions of *good* and *less than good* (i.e., fair or poor) performance. The results of a binary logit regression using this dichotomous dependent variable are very similar to those from the multinomial logit. The four empowerment variables have positive coefficients and achieve statistical significance. Moreover, empowerment *practice 3* and empowerment *practice 4* have substantively significant effects on the new dependent variable (good performance) whereas empowerment *practice 1* and *practice 2* have very small substantive effects. In short, the findings are robust to changes in the coding and estimation of the dependent variable.
7. According to the retrospectively rational model of human behavior, "individuals and organizations will take actions to make sense of or appear to be consistent with previous choices" (Pfeffer, 1997, p. 66). Managers use goals and performance feedback to control the behavior of employees, in part under the assumption that they cannot be trusted to behave responsibly. Employees, in turn, might rationalize the use of this control mechanism by shirking responsibility and slowing down the pace of work.

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