

Crowding Out Intrinsic Motivation? The Role of Performance-Related Pay

Edmund C. Stazyk
Assistant Professor
American University, School of Public Affairs
Department of Public Administration & Policy
4400 Massachusetts Avenue, NW
Washington, DC 20016
Phone: 202-885-6362
Fax: 202-885-2347
E-Mail: stazyk@american.edu

* The author would like to acknowledge and thank Christina Chiappetta at the International Public Management Association for Human Resources for her help in making available results from the *2007 Total Compensation Benchmarking Survey*.

ABSTRACT

This article attempts to expand upon the current debate involving the relationship between performance-related pay and public service motivation. Two models are used to examine how variable pay influences public service motivation and job satisfaction among a sample of city managers, assistant city managers, and department heads. Findings support the argument that variable pay systems can crowd out public service motivation. However, results also present a much more complicated picture. Variable pay systems appear to primarily crowd out the intrinsic motives of those with high levels of public service motivation. However, employees without high public service motivation appear to value variable pay systems. Moreover, evidence suggests the crowding effect has little influence on overall job satisfaction. Instead, employees—on whole—are most satisfied when variable pay systems are present.

As New Public Management ideals have taken root globally, interest in linking pay to performance has witnessed a dramatic resurgence (Perry, Engbers, and Jun 2009; Houston 2009; Moynihan 2008). In the U.S. context, President Obama recently called for the General Schedule to be revamped, and indicated any effort to reform the federal pay system must be linked to pay-for-performance (Losey 2009). Similarly, former President Bush called for creating a flexible human resource system, enhanced human capital policies, and pay-for-performance in the Departments of Defense and Homeland Security (Losey 2009; Perry et al. 2009; Bush 2002; Homeland Security Act of 2002 (Pub. L. No. 107-296)).

While pay-for-performance and other variable pay systems clearly seem to be a reality for public managers, public administration scholars have largely denounced performance-related pay (e.g., Perry et al. 2009; Ingraham 1993; Kellough and Lu 1993; Perry, Mesch, and Paarlberg 2006). Criticisms of performance-related pay trace, in part, to research demonstrating that such systems have historically failed to increase long-term organizational performance (Houston 2009; Perry et al. 2009; Ingraham 1993; Kellough and Lu 1993; Milkovich and Wigdor 1991). As Perry, Engbers, and Jun (2009) aptly summarize, performance-related pay is generally unsuccessful in increasing organizational performance because such systems: 1) typically fail to change employee motivation, 2) are easily affected by a variety of contextual factors, 3) may depend on the clarity of job responsibilities, and 4) frequently suffer from implementation breakdowns.

Given these shortcomings, a number of scholars have emphasized the importance of recognizing public service motivation as an alternative to variable pay systems (Perry and Wise 1990; Perry et al. 2009; Houston 2009; Moynihan 2008; Frey and Osterloh 2005; Frey and Oberholzer-Gee 1997). Scholars writing in this vein note the discussion on employee

motivation has traditionally been dominated by an assumption that workers are self-interested and primarily motivated by financial incentives and rewards (Houston 2009; Perry et al. 2009; Moynihan 2008).¹ These scholars further argue we have discounted the unique institutional context of the public sector and have overlooked the relevance of alternative theories of employee motivation (Perry and Hondeghem 2008; Moynihan 2008; Houston 2009; Perry et al. 2009). More specifically, they suggest we have trivialized the value of commitment to the public interest, a sense of civic duty, and *other regarding* orientations in shaping employee behavior and performance (Perry and Hondeghem 2008; Perry et al. 2009; Houston 2009; Moynihan 2008; Frey and Osterloh 2005; Frey 1997). By doing so, we assume human behavior is, as a rule, extrinsically rather than intrinsically derived (Houston 2009; Deci and Ryan 1985; Deci, Koestner, and Ryan 1999; Frey 1997; Frey and Osterloh 2002). If, however, public sector employees are primarily driven by a public service motivation or by other regarding orientations, then efforts to guide or motivate employees through systems that rely solely on extrinsically-based incentives—such as those found in variable pay systems—are unlikely to be either successful or effective (Houston 2009; Perry et al. 2009; Frey 1997; Frey and Osterloh 2005).

Perhaps more importantly, for scholars interested in the interaction between performance-related pay and public service motivation, variable pay systems may actually be harmful to employee motivation and performance (Houston 2009; Moynihan 2008; Frey 1997; Frey and Osterloh 2005; Perry et al. 2009). There are two broad reasons for this assumption. First, variable systems may be poorly designed (Houston 2009). Poorly designed systems might fail to accurately gauge, and inform employees about, the

¹ If this assumption holds true, performance-related pay is both practically and theoretically sensible.

importance of specific organizational activities and tasks (Houston 2009, 47). Additionally, variable pay systems may influence employees to focus on only those tasks for which they are rewarded (Houston 2009, 47). Second, there is strong theoretical reason to suspect performance-related pay may “crowd out” intrinsic motivations (Houston 2009; Perry et al. 2009; Moynihan 2008; Frey 1997; Frey and Osterloh 2005; Le Grand 2003). In this case, public service motivation could actually be diminished or reduced by the emphasis on performance-related pay. If the decrease in public service motivation is greater than the increase in extrinsically-derived motivation, there is an overall loss in motivation to perform a job (Houston 2009, 47; Frey and Osterloh 2005). Consequently, and given the other shortcomings associated with variable pay systems, public administration scholars have urged caution in pursuing performance-related pay (Houston 2009; Perry et al. 2009), and have argued the public sector would be better served by hiring employees attracted to public work (Houston 2009; Moynihan 2008).

While these claims have strong practical and theoretical merit, to the author’s knowledge, no research exists providing empirical evidence of the crowding effect as it relates to variable pay systems and public service motivation in the United States. Consequently, this paper attempts to provide a first—albeit rough—examination of the effects of variable pay systems on (1) public service motivation and (2) employee job satisfaction among a sample of local government employees. In doing so, the author hopes to expand the dialogue on the relationship between performance-related pay and public service motivation.

The following sections review the literature on public service motivation, variable pay, and the crowding effect in greater detail. Later sections test the relationship between

public service motivation, performance-related pay, and employee job satisfaction before discussing the implications of study findings for practice and future research.

REVIEW OF THE LITERATURE

The public service motivation concept has long held individuals may be predisposed “to respond to motives grounded primarily or uniquely in public institutions and organizations” (Perry and Wise, 1990, p. 368). According to this stream of scholarship, public sector employees frequently view public service as a calling, and often experience a high degree of enjoyment, satisfaction, and fulfillment from working in the public sector and helping others (Frederickson 1997; Perry and Wise 1990; Houston 2009). As Wright and Pandey (2008) note, early efforts to test this claim argued employees place greater value on intrinsic rewards (Buchanan 1975; Cacioppe and Mock 1984; Crewson 1997; Frank and Lewis 2004; Houston 2000; Rainey 1982; Wittmer 1991) and less value on extrinsic rewards (Cacioppe and Mock 1984; Jurkiewicz, Massey, and Brown 1998; Khojasteh 1993; Kilpatrick, Milton, and Jennings 1964; Lawler 1971; Newstrom, Reif, and Monczka 1976; Rainey 1982; Rawls, Ulrich, and Nelson 1975; Wittmer 1991) than their private sector counterparts (504). While the results of these studies have, at times, been mixed, public service motivation scholars have generally found considerable support for the notion that public employees place higher value on helping others and lower value on financial rewards (Pandey and Stazyk 2008; Wright and Pandey 2008; Houston 2000; Wright 2001).

These findings have led public service motivation scholars to suggest public organizations should focus on hiring employees with high intrinsic motivations, and should also concentrate on cultivating intrinsic motives—such as public service motivation—more

broadly among workers (Moynihan 2008; Pandey and Stazyk 2008; Perry et al. 2009; Houston 2009). This recommendation rests on two basic assumptions: 1) public service motivation and other intrinsic motives provide a stronger motivational force for directing and guiding employee behavior than extrinsic motivators (Moynihan 2008; Houston 2009); and 2) because public service motivation has a stronger effect on public employees, public organizations should be designed in ways that maximize the ability of workers to meet their intrinsic motives (Moynihan 2008; Perry et al. 2009; Houston 2009). In the simplest terms, public service motivation scholars have called for public organizations to focus on the individual and intrinsic motives rather than on extrinsic mechanisms for controlling and directing human behavior (Houston 2009).

Unfortunately, public organizations tend to focus on extrinsic mechanisms for guiding human action and behavior (Houston 2009; Perry et al. 2009; Kellough and Lu 1993; Moynihan 2008; Frey 1997).² This focus often reflects a tacit set of assumptions about public employees—that they are self-interested, typically untrustworthy and deceptive, and too frequently unaccountable to citizens and political masters (Houston 2009; Moynihan 2008; Le Grand 2003; Frey 1997). Traditional extrinsic motivators, such as pay, benefits, and job security, have long been seen as mechanisms for correcting and directing employee conduct in ways that might offset poor employee behavior while also increasing accountability (Moynihan 2008; Perry et al. 2009; Kellough and Lu 1993). However, New Public Management initiatives—with their emphasis on the market model—

² At some level, the focus on extrinsic rather than intrinsic motivators is understandable. Research suggests extrinsic motivators are much easier for organizations to put in place and monitor (see e.g., Houston 2009). Moreover, extrinsic motivators have long been linked to U.S. civil service systems (see e.g., Kellough and Lu 1993).

have sought to further address concerns about bureaucratic responsiveness (Houston 2009; Moynihan 2008).

To secure increased responsiveness from bureaucrats, pay and tenure are increasingly, and more strongly, linked to employee performance and organizational objectives (Perry et al. 2009; Houston 2009; Moynihan 2008; Sanders 2004; Kellough and Lu 1993). This trend has led to a growth in variable pay systems in which some level of employee pay is contingent upon meeting specific performance objectives (Perry et al. 2009; Houston 2009; Kellough and Lu 1993). A variety of variable pay systems exist, including pay-for-performance, skill-based pay, spot awards, competency-based pay, team-based pay, and gainsharing (IPMA-HR 2007). At their heart, these systems are intended to increase accountability based on performance and to develop a customer-based orientation (Houston 2009; Perry et al. 2009).

Public service motivation scholars, however, have raised serious concerns about increased reliance on performance-related pay (Houston 2009; Moynihan 2008; Frey 1997). Research has consistently demonstrated variable pay systems suffer from serious implementation issues (Kellough and Lu 1993; Perry et al. 2009; Houston 2009). For instance, research suggests public organizations cannot provide rewards large enough to change employee behavior or organizational culture in meaningful ways (Kellough and Lu 1993; Perry et al. 2009; Houston 2009; Sanders 2004). Because of these limitations, the effectiveness of variable pay systems may be severely limited and can lead to a reduction in employee morale and satisfaction, and can also increase employee turnover (e.g., Sanders 2004).

Public service motivation scholars also suggest such systems mistakenly start from the assumption that employee action and behavior is knavish (or self-interested) and best controlled through extrinsic mechanisms (Le Grand 2003; Houston 2009; Perry et al. 2009; Moynihan 2008; Frey 1997). By doing so, the knightly (or altruistic) inclinations of public employees are largely overlooked or ignored (Le Grand 2003; Houston 2009; Moynihan 2008; Frederickson 1997). Furthermore, scholars suggest the logic underpinning an emphasis on extrinsic rewards and performance-related pay is flawed (Moynihan 2008; Houston 2009). By attempting to harness the self-interested behaviors of individuals, such systems may actually increase the likelihood employees will act knavishly (Moynihan 2008, 249; Houston 2009). Consequently, public service motivation scholars argue the focus on market-based mechanisms and variable pay systems is a poor place to begin designing a system for controlling and guiding human action and behavior.

Perhaps more importantly, public administration scholars have also suggested performance-related pay and the emphasis on market-based initiatives may “crowd out” intrinsic motivation (Houston 2009; Moynihan 2008; Perry et al. 2009; Frey 1997; Deckop and Cirka 2000; Weibel, Rost, and Osterloh 2007). The crowding literature—particularly the work of Deci and colleagues (1999)—demonstrates financial and performance incentives reduce intrinsic motivation and may influence a variety of other factors, such as one’s civic behavior and virtue (Frey 1997; Moynihan 2008). In this case, public service motivation could ultimately be diminished by the emphasis on performance-related pay. Moreover, if the decrease in public service motivation is greater than the increase in extrinsically-derived motivation, it is likely there will be an overall loss in motivation to perform a job (Houston 2009, 47; Frey and Osterloh 2005). Weibel and colleagues (2007)

provide some evidence supporting this claim. Similarly, Deckop and Cirka (2000) provide evidence that the introduction of performance-related pay systems in non-profit settings has led to a decline in intrinsic motivation (Deckop and Cirka 2000; Weibel et al. 2007).

Simply, absent strong financial incentives—and despite the possibility that performance-related pay may increase knavish inclinations—public service motivation scholars believe variable pay systems will crowd out public service motivation without substantially increasing extrinsic motivation in a manner sufficient to overcome the reduction in intrinsic motivation (Houston 2009; Moynihan 2008; Perry et al. 2009; Kellough and Lu 1993; Sanders 2004). Beyond the basic financial constraints public sector organizations operate under, research also suggests it can be tremendously difficult to measure performance, and to further link performance to pay (Kellough and Lu 1993; Sanders 2004; Perry et al. 2009; Houston 2009; Moynihan 2008). It is possible this shortcoming creates situations in which employees may: 1) engage in goal displacement and gaming, 2) ignore due process outcomes, and 3) overlook management values (Moynihan 2008, 257-258).

Nevertheless, it is unlikely the market model and performance-related pay will be abandoned in the near future (Moynihan 2008; Perry et al. 2009). There are several reasons for this: 1) performance-related pay has strong symbolic political meaning; 2) private sector initiatives, like performance-related pay, tend to be looked upon favorably in the public sector; 3) performance-related pay is thought to increase both managerial and political control; 4) there is a reluctance to admit such reforms have failed to produce as anticipated; and 5) there tends to be an assumption that problems are simply implementation glitches (Kellough and Lu 1993, 55-58). This has prompted scholars to

suggest public service motivation should become a driving factor in the selection process, and that the market model and public service motivation should be married (e.g., Moynihan 2008; Houston 2009). More specifically, Moynihan (2008) suggests high-powered incentives should be disconnected from performance measures, performance measures should be linked to intrinsic values, efforts should be made to build a stronger public service culture, and, again, employees should be selected largely on the basis of their intrinsic motives (259-262).

While there are strong practical and theoretical reasons for suspecting the arguments made by public service motivation scholars about performance-related pay are correct, we know little about the actual empirical relationship between public service motivation and variable pay systems in the U.S. (Perry et al. 2009; Houston 2009). More specifically, we have little empirical evidence variable pay systems crowd out public service motivation and that crowding translates into harmful individual and organizational outcomes. This paper attempts to provide an initial—albeit limited—examination of the possible relationship between public service motivation, variable pay systems, and employee job satisfaction. Because the purpose of this research is largely exploratory, no specific hypotheses are set forth. The next section discusses the analytic approach taken.

ANALYTIC PROCEDURES

Methodology

Data for this study come from two sources: Phase IV of the National Administrative Studies Project (NASP-IV) and the International Public Management Association for Human Resource's (IPMA) *2007 Total Compensation Benchmarking Survey*. NASP-IV is multi-method study, a key part of which included a survey administered to a nationwide sample

of city managers, assistant city managers, and department heads in U.S. local government jurisdictions with populations at, or above, 50,000 residents. Departments surveyed include Finance/Budgeting, Public Works, Personnel/HR, Economic Development, Parks and Recreation, Planning, and Community Development.

The sample design and construction for the NASP-IV study was aided by the International City/County Management Association (ICMA). ICMA is widely regarded as the authoritative source of information about U.S. local government jurisdictions and professionals serving in these jurisdictions. Based on study criteria, ICMA compiled a list with contact details of potential respondents.³ The NASP-IV team used the initial list provided by ICMA and augmented it in a number of ways to finalize the sample. These steps—relying on publicly available information—included:

1. Verifying the accuracy of the information;
2. Augmenting the list where the ICMA list did not have complete information;
3. Correcting the list to ensure that only individuals who met study criteria were on the list; and
4. Compiling working e-mail addresses for the respondents in the sample.

These efforts resulted in 3,316 respondents in the study sample. The study protocol was reviewed and approved by the Institutional Review Board at the University of Kansas. Each respondent in the study sample received an initial letter through U.S. mail which introduced the study and provided details on how to participate in the study. Each potential respondent was directed to the study website and provided a secure study

³ For policy reasons, ICMA was not able to provide e-mail addresses.

participation code. On visiting the study website, the respondent was provided an informational note about their rights as a potential study participant. This note highlighted that participation was voluntary and that except for respondents' time there were no foreseeable risks and that the study team will take all necessary steps to protect the confidentiality of respondents, including conducting analyses and reporting results at the aggregate level only. After the initial letter, multiple follow-up methods were used to contact respondents, including e-mail, fax, and phone calls. When the study concluded 1,538 of the 3,316 had responded, for a response rate of 46.4%. The 1,538 respondents came from 545 different jurisdictions—with 1 respondent from 126 jurisdictions, 2 respondents from 130 jurisdictions, and 3 or more from 289 jurisdictions.

Select demographic characteristics of the 1,538 respondents are provided in Table 1. The mean age of respondents was 51.4 with an inter-quartile range of 10 (25th percentile being 47 and 75th percentile being 57). As expected, a sizable majority were male (70.6%), white (85.9%), highly educated (more than 60% with graduate degrees), and well compensated (68.3% with salaries over \$100,000). The table also displays the functional specialization of managers—28.6% were general managers (city manager or deputy/assistant city manager) and the rest managed specific city departments and/or functions. This distribution of functional specialization of respondents closely matched the distribution of functional specializations in the sample. Most measures used in the study have been tested and validated in earlier studies; some measures were developed in earlier administrations of the National Administrative Studies Project; and yet others were written and/or refined for NASP-IV.

<INSERT TABLE 1>

While NASP-IV includes general data on compensation and benefits, detailed information on variable pay systems were not readily available. Consequently, this paper also relies on data collected in the *2007 Total Compensation Benchmarking Survey* conducted by the International Public Management Association for Human Resources. The IPMA study focuses wholly on variable pay systems in government agencies (IPMA-HR 2007). The survey, which was sent to all IPMA members, was conducted online in January and February 2007 (IPMA-HR 2007).⁴ Upon completion of the project, 640 individuals from all levels of government had responded—for a response rate of roughly 10% (IPMA-HR 2007). Results indicate approximately 45% of all government agencies surveyed have some form of variable pay system, and 88% of these government agencies have a pay-for-performance system (IPMA-HR 2007). Over half of all respondents came from cities (IPMA-HR 2007).

The IPMA and NASP-IV samples had 154 cities in common across measures of interest in this study. Data from the IPMA study were subsequently pooled with individual responses from the NASP-IV survey. Because NASP-IV included multiple respondents from cities, this resulted in a combined dataset with 500 respondents. In terms of pay systems, 300 respondents operate in cities without variable pay systems; 18 respondents operate in cities with some type of limited variable pay system⁵; and 182 respondents operate in cities with a pay-for-performance system. Demographic statistics and functional specializations mirror those of the broader sample. For instance, roughly 65% of respondents were male, 84% were white, 66% had graduate degrees, and 72% earned at least \$100,000.

⁴ The IPMA survey coincides with the collection of NASP-IV data.

⁵ For the purposes of this paper, limited variable pay systems include the use of skill-based pay, spot awards, competency-based pay, team-based pay, and gainsharing.

Study Measures

Two separate models, incorporating the same measures, are run to examine the relationship between performance-related pay, public service motivation, the crowding effect, and job satisfaction. These measures include items on public service motivation, job satisfaction, variable pay systems, reward satisfaction, organizational goal clarity, individual role clarity, human resources red tape, and person-organization fit. With the exception of the variable pay measures, all other concepts are commonly used in public service motivation studies (Pandey and Stazyk 2008). A detailed discussion on study measures can be found below.

Public Service Motivation. Public service motivation is measured using five items taken from Perry's (1996, 1997) original research on public service motivation. These items have also been used in the *1996 Merit Principles Survey* (conducted by the U.S. Merit Systems Protection Board) and several scholarly works (e.g., Kim 2006; Alonso and Lewis 2001; Naff and Crum 1999). In the NASP-IV project, the public service motivation measures have a Cronbach's alpha of 0.829, and include the following:

- Meaningful public service is very important to me.
- I am often reminded by daily events about how dependent we are on one another.
- Making a difference in society means more to me than personal achievements.
- I am prepared to make sacrifices for the good of society.
- I am not afraid to go to bat for the rights of others even if it means I will be ridiculed.

These measures are common in the public service motivation scholarship (e.g., Perry 1996; Naff and Crum 1999; Alonso and Lewis 2001), and capture several different

dimensions of public service motivation, including an individual's sense of civic duty, compassion, and self-sacrifice. For ease of analysis, respondents were grouped into three categories based on their reported level of public service motivation: below average public service motivation (assumes a value of 1), average public service motivation (assumes a value of 2), and high public service motivation (assumes a values of 3).

Job Satisfaction. Job satisfaction is measured using two items found in previous administrations of the National Administrative Studies Project. These measures were taken from the *Michigan Organizational Assessment Questionnaire* (Cammann, Fichman, Jenkins, and Klesh 1979; Seashore, Lawler, Mirvis, and Cammann 1982; Cook, Hepworth, Wall, and Warr 1981). The items have a Cronbach's alpha of 0.723, and include:

- In general, I like working here.
- In general, I like the type of work I do.

These items have been used in several studies, and are intended to capture the extent to which employees are satisfied with their jobs. Significantly, past research links public service motivation and job satisfaction, and further suggests higher job satisfaction reduces employee turnover intentions and may lead to performance gains for organizations (e.g., Rainey 2003; Kim 2005). Respondents were grouped into three categories reflecting the degree of job satisfaction they reported: below average job satisfaction (assumes a value of 1), average job satisfaction (assumes a value of 2), and high job satisfaction (assumes a value of 3).

Variable Pay System. Measures on performance-related pay are taken from the *2007 Total Compensation Benchmarking Survey*, conducted by the International Public Management Association for Human Resources. The survey asked respondents to indicate

whether their organization had variable pay systems incorporating skill-based pay, spot awards, competency-based pay, team-based pay, gainsharing, and pay-for-performance (IPMA-HR 2007). Several of the cities in common between NASP-IV and the IPMA survey lacked variable pay systems of any kind; a small number of cities included only limited variable pay systems (skill-based pay, spot awards, competency-based pay, team-based pay, and gainsharing); and roughly 36% of cities had full pay-for-performance systems.

In many ways, pay-for-performance is the most formalized and extreme approach to linking pay and performance. As such, it is plausible the effects—positive or negative—of pay-for-performance systems are felt more strongly by employees than other types of performance-related pay (e.g., spot awards). Consequently, respondents were grouped into three categories based on the type of variable pay system their city had in place: a standard compensation system without variable pay (assumes a value of 1), a limited variable pay system (assumes a value of 2), and a pay-for-performance system (assumes a value of 3).

Reward Satisfaction. Employee reward satisfaction is measured using three items developed by Paul Spector (1985) for use in the *Job Satisfaction Survey*. The items have a Cronbach's alpha of 0.645, and include the following:

- If I accomplish my work objectives, it increases my chances for a pay raise.
- Fulfilling all my job responsibilities does little to improve my chances for a promotion (reverse coded).
- Raises are too few and far between (reverse coded).

Although public management research suggests public sector employees—particularly those in higher levels of the organization—appear to be primarily attracted to the challenge of public sector work and a desire to perform public service (Rainey 2003;

Hartman and Weber 1980), compensation and other extrinsic rewards still exert a strong influence on the motivation of public sector employees (Rainey 1982, 1983, 2003, 2006). The reward satisfaction items included in this study are intended to capture the role compensation and promotions play in motivating public employees. For the present analysis, respondents were placed into three groups: below average satisfaction (assumes a value of 1), average satisfaction (assumes a value of 2), and high satisfaction (assumes a value of 3).

Organizational Goal Clarity. Three items are included to measure organizational goal clarity. These items are similar to measures developed and used by Rainey (Rainey 1983; Rainey, Pandey, and Bozeman 1995), but they have been modified slightly throughout consecutive versions of the National Administrative Studies Projects. The goal clarity items have a Cronbach's alpha of 0.828, and include the following:

- This organization's mission is clear to almost everyone who works here.
- This organization has clearly defined goals.
- It is easy to explain the goals of this organization to outsiders.

Clear organizational goals help define and shape employee attitudes and behaviors (Rainey 1989, 2003; Locke and Latham 2002; Bandura 1997; Bandura and Locke 2003); conversely, ambiguous goals may increase employee stress and other undesirable outcomes (Pandey and Rainey 2006). Consequently, employees confronted with ambiguous goals may be less likely to believe their values are similar to those of their organizations. Respondents were grouped into three categories based on the degree of goal clarity they perceived in their organization: below average goal clarity (assumes a value of 1), average goal clarity (assumes a value of 2), and high goal clarity (assumes a value of 3).

Individual Role Clarity. The NASP-IV project also includes three measures on individual role clarity. These items were taken from a six-item scale developed by Rizzo, House, and Lirtzman (1970); they have also been included in past versions of the National Administrative Studies Project and several scholarly publications. In NASP-IV, the role clarity measures have a Cronbach's alpha of 0.855, and include the following items:

- My job has clear, planned goals and objectives.
- I feel certain about how much authority I have.
- I know exactly what is expected of me.

These measures are included to examine whether role clarity decreases uncertainty and perceived conflicts between organizational demands and employee needs and expectations (Rizzo et al. 1970; House and Rizzo 1972; Rainey 2003). Employees expressing high degrees of role clarity may be more likely to believe their values and goals align with those of their organization. Respondents are grouped into three categories based on the degree of role clarity perceived: below average role clarity (assumes a value of 1), average role clarity (assumes a value of 2), and high role clarity (assumes a value of 3).

Human Resources Red Tape. Four measures on human resources red tape are included in this project. These items were adapted from previous versions of the National Administrative Studies Project, and were based on earlier research by Rainey (e.g., Rainey et al. 1995; Pandey and Scott 2002). In NASP-IV, these measures had a Cronbach's Alpha of 0.782, and included the following items:

- Personnel rules make it hard to hire new employees.
- Personnel rules make it hard to remove poor performers from the organization.

- Personnel rules on promotion make it hard for a good employee to move up faster than a poor one.
- Pay structures and personnel rules make it hard to reward a good employee with higher pay here.

Past research indicates bureaucratic red tape has a negative impact on a variety of work-related constructs, including public service motivation, job satisfaction, job involvement, organizational commitment, and role clarity (Pandey and Stazyk 2008; Pandey and Wright 2006; Pandey, Wright, and Stazyk 2007). In the current study, employees were grouped into three categories based on the degree of human resources red tape they reported: below average red tape (assumes a value of 1), average red tape (assumes a value of 2), and high red tape (assumes a value of 3).

Person-Organization Fit. Person-organization fit is measured using three items adapted from Wright's (2007) measures of mission valence. The items have a Cronbach's alpha of 0.722, and include the following:

- This organization provides valuable public service.
- I believe that the priorities of this organization are quite important.
- My personal values are compatible with those of this organization.

The person-organization fit concept attempts to capture whether individuals believe they "fit" with their organizations. Individuals who believe their values are congruent with those of their organization may express higher overall job satisfaction; these employees may also less frequently express intentions to leave their organizations, which has clear implications for organizational performance. For the current project, respondents were grouped into three categories based on perceived fit with their organizations: below

average fit (assumes a value of 1), average fit (assumes a value of 2), and close fit (assumes a value of 3).

Model One: Public Service Motivation and the Crowding Effect

Providing empirical evidence of the crowding effect from existing datasets presents substantial research challenges, due, in large part, to the inherent difficulties associated with capturing the dynamic relationships between extrinsic and intrinsic motivators. As such, this paper represents a simple, limited first step in examining the association between public service motivation, variable pay, and individual outcomes. However, much more work is needed.

To test for the crowding effect, this paper begins by examining the association between study measures and public service motivation. More specifically, public service motivation is treated as the dependent variable in an ordered logistic regression. The ordered logit is a maximum likelihood estimation technique that allows for testing an ordinal level dependent variable by assuming the variable follows a latent continuous probability distribution (Long 1997). It further assumes independent variables either increase or decrease the likelihood of a particular outcome on the dependent variable, as well as the values of the latent variable in general. The independent variables are assumed to be linearly related to the latent variable, which is linked to actual outcomes on the dependent variable through the likelihood function (Long 1997).

In Model One, the variable pay systems, reward satisfaction, goal and role clarity, red tape, person-organization fit, and job satisfaction measures are regressed on public service motivation. Results are clustered by city with robust standard errors. Table 2

presents detailed results for the ordered logit.⁶ Findings indicate the reward satisfaction ($p = 0.032$), goal ($p = 0.068$) and role ($p = 0.086$) clarity, and person-organization fit ($p = 0.001$) measures were each statistically significant with public service motivation. In-line with past research, these findings suggest employees who are satisfied with the rewards they receive, believe organizational goals and their individual roles are relatively clear, and think they fit well with their organizations are more likely to report having high levels of public service motivation (Pandey and Stazyk 2008; Bright 2008; Steijn 2008; Wright and Pandey; 2009). Neither the human resources red tape ($p = 0.770$) or job satisfaction ($p = 0.735$) measures were statistically significant with public service motivation. Interestingly, the variable pay systems measure ($p = 0.562$) was also not significantly related to public service motivation. On its face, this finding suggests the existence of variable pay systems in city governments may not influence the public service motives of organizational heads.

<INSERT TABLE 2>

As an additional test of the possible relationship between public service motivation and variable pay systems, a series of Monte Carlo simulations relying on the *Clarify* program were conducted (Tomez, Wittenberg, and King 2001). This approach allowed for predicted probabilities to be simulated based on real situations drawn from the NASP-IV data (King, Tomz, and Wittenberg 2000, 350). Predicted probabilities for public service motivation were simulated with respect to specific values on the variable pay systems measure. These simulations incorporate stochastic elements, and drew 1,000 parameter estimates from their asymptotic distribution (Tomz et al. 2001). Part of the value of this approach rests on the fact that “*Clarify* computes quantities of interest based on *all*

⁶ Tests confirm the model met the proportional odds assumption.

estimated coefficients, regardless of their level of statistical significance. This is not problematic because the true quantities of interest are usually the predicted values...not the coefficients themselves” (Tomz et al. 2001, 19).

Any effort to obtain predicted probabilities for public service motivation must begin by setting the values for each explanatory variable. Because this paper examines whether performance-related pay crowds out the effects of public service motivation, the analysis focuses on organizations with *standard compensation*, *limited variable pay*, and *pay-for-performance* systems. It further draws comparisons across individuals with *high*, *average*, and *below average* public service motivation. For ease of presentation, predicted probabilities are reported only across the high job satisfaction category.⁷ All other variables are each set at their mean values. The simulation results can be found in Table 3 and Figure 1.

<INSERT TABLE 3 AND FIGURE 1>

Results show some small evidence of the crowding out effect. As one would anticipate, the probability an individual will report having high public service motivation is slightly larger in standard compensation systems (21.30%) than limited variable pay systems (20.36%) and pay-for-performance systems (19.54%). Interestingly, the predicted probabilities for individuals with average and low levels of public service motivation suggest employees operating under pay-for-performance and limited variable pay systems are slightly more likely to be satisfied in their jobs than employees in standard compensation systems. However, based on the confidence intervals for each set of

⁷ Predicted probabilities for the average and below average job satisfaction categories closely mirror those of the high job satisfaction category. A detailed statistical appendix, including these additional categories, is available from the author upon request.

probabilities, one should be extremely cautious in treating these differences as substantially meaningful. Next, the relationship between job satisfaction, public service, motivation, and variable pay is explored in further detail.

Model Two: Job Satisfaction, Public Service Motivation, and Variable Pay

As scholars have noted, the relationship between intrinsic and extrinsic motivation becomes particularly important when crowding effects result in a net loss in motivation for organizations (Houston 2009, 47; Frey and Osterloh 2005). To provide an additional—albeit limited—test of the relationship between public service motivation and variable pay systems, a second model treating employee job satisfaction as the dependent variable is also presented. Employee job satisfaction has been linked to employee turnover, organizational commitment, job involvement, and organizational performance more broadly (Moynihan and Pandey 2008; Bertelli 2007; Felps, Mitchell, Heckman, Lee, Holtom, and Harman 2009; Kim 2005). Consequently, by again relying on an ordered logistic regression and a series of Monte Carlo simulations, this second model provides an additional opportunity to assess the possible effects of performance-related pay on public service motivation—particularly in terms of employee job satisfaction.

In Model Two, public service motivation, the variable pay systems, reward satisfaction, goal and role clarity, red tape, and person-organization fit measures are regressed on the job satisfaction measure. Results are again clustered by city with robust standard errors. Table 4 presents detailed results for the ordered logit.⁸ Findings suggest public service motivation ($p = 0.540$), reward satisfaction ($p = 0.665$), goal clarity ($p = 0.487$), and human resources red tape ($p = 0.436$) are not significantly related employee

⁸ Tests again confirm the model met the proportional odds assumption.

job satisfaction. In part, these findings may reflect the sample considered here. Future research—using other methodologies—should confirm these findings. Results further demonstrate individual role clarity ($p = 0.000$) and person-organization fit ($p = 0.000$) are significantly related to employee job satisfaction. In this case, employees who experience higher degrees of role clarity, and who also believe their values are congruent with those of their organization, are more likely to express greater job satisfaction. Finally, results also indicate employees under a variable pay and pay-for-performance systems are more likely to report having higher job satisfaction ($p = 0.041$). This suggests variable pay systems matter to the sample considered, and may have positive benefits on organizational performance.

<INSERT TABLE 4>

To look, more specifically, at how variable pay systems may influence job satisfaction and public service motivation, another series of Monte Carlo simulations was conducted. In this case, the analysis provides predicted probabilities for job satisfaction and public service motivation at *high*, *average*, and *below average* levels respectively. Predicted probabilities also reflect the type of compensation system in place: a *standard compensation system*, a *limited variable pay system*, and a *pay-for-performance system*. All other variables are again set at their mean values. Results can be found in Table 5.

<INSERT TABLE 5>

In this case, results provide little evidence variable pay systems harm either employee job satisfaction or public service motivation. The probability an individual will report having both high job satisfaction and high public service motivation is greatest under pay-for-performance systems (66.84%), followed by limited variable pay systems

(62.13%), and finally standard compensation systems (57.09%). This trend is similar for employees who are highly satisfied with their jobs and have only average or low public service motivation. Furthermore, the probability an employee will have average or below average job satisfaction decreases under limited variable pay and pay-for-performance systems. In this case, predicted probabilities also indicate employees with higher levels of public service motivation will be less likely to report having average or below average job satisfaction. It is again worth noting the confidence intervals suggest there may be little substantive difference between each set of probabilities. The subsequent section reviews and discusses the findings and limitations of the study results.

DISCUSSION

Measuring the crowding effect among public employees—particularly as it relates to public service motivation and performance-related pay—faces substantial challenges for both practical and empirical reasons. While theories on intrinsic and extrinsic motivation are often highly nuanced and quite elegant, it is incredibly difficult to assess how extrinsic and intrinsic motivations influence employee behavior and organizational performance generally. These difficulties are only further compounded in any effort to determine how the *interaction* between extrinsic and intrinsic incentives effect motivation and drive human behavior. Part of this challenge traces from a tendency among researchers to consider extrinsic and intrinsic motivations separately. Moreover, research examining extrinsic and intrinsic motivations *simultaneously* among public sector employees is especially sparse.

The inherent difficulties associated with conducting empirical studies on performance-related pay and public service motivation may also reflect the fact that the

role and influence of extrinsic and intrinsic motivators are often highly contextualized—meaning, for example, public employees in different settings are highly likely to interpret and value performance-related pay differently (Perry et al. 2009; Houston 2009). Similarly, it is likely the motivational bases of public service motivation are contextualized—with, for example, street-level bureaucrats placing greater value on self-sacrifice while organizational leaders may value attraction to policy-making more heavily (Pandey and Stazyk 2008; Houston 2009).

There are also substantial limitations in the current study. For example, this research only considers the association between variable pay systems and public service motivation for city managers, assistant city managers, and department heads. Middle- and lower-level managers, along with public sector employees at different levels of government, may view and respond to variable pay systems quite differently. In addition, there are also several other factors that should be considered when examining the crowding effect and the possible links between variable pay systems and public service motivation. For instance, it would be useful to look at: 1) the pervasiveness and formality of the reward system, 2) how long the reward system has been in place, 3) the precise nature and level of rewards offered, 4) where and how rewards are most frequently distributed, and 5) whether employees are generally satisfied with the level of performance-related pay.

Additionally, the analysis conducted here is limited by available data. It would be incredibly beneficial to gather and analyze other data—particularly time series data—and to employ other research methodologies. Because performance-related pay is highly contextualized, qualitative research methodologies may be more effective at parsing out

the benefits, shortcomings, and implications of variable pay systems on extrinsic and intrinsic motivation. More importantly, as this discussion suggests, the factors mentioned limit the generalizability of the current study and of attempts to quantify the interaction between performance-related pay and public service motivation more broadly. These limitations urge caution in placing too much emphasis or weight on the results of this study.

In spite of these limitations, findings from this study add to the currently scholarly debate on performance-related pay and employee motivation by exploring whether any empirical evidence exists demonstrating variable pay systems crowd out public service motivation. Much of the public service motivation scholarship recommends against relying on performance-related pay for fear that it will reduce intrinsic motivation among public employees and may lead to negative outcomes for citizens (Houston 2009; Moynihan 2008; Perry et al. 2009). Instead, scholars have suggested organizations and reward systems should be internally (rather than externally and extrinsically) focused (Perry et al. 2009; Houston 2009; Moynihan 2008). They have further called for public sector organizations to: 1) link performance measures to intrinsic values, 2) build a public service culture, 3) focus more attention on the selection process for public employees, and 4) limit outsourcing to private and nonprofit organizations (Moynihan 2008; Houston 2009; Perry et al 2009). These recommendations are drawn from observations about the unique institutional context of the public sector. Moreover, the recommendations make practical sense, and are likely to lead to a more committed public sector workforce.

That said, results from the current study raise questions about the relationship between performance-related pay, public service motivation, and the overall extensiveness

of the crowding out effect—at least in the sample considered. The predicted probabilities from Model One suggest the crowding out effect may indeed occur for employees with high levels of public service motivation (despite overall job satisfaction). While the change in probabilities is relatively small, this finding is troubling given the prevalence with which public employees indicate they have high public service motivation. Moreover, it tends to support claims that variable pay systems should be pursued with caution.

However, the predicted probabilities from Model One also suggest employees with average or below average public service motivation are more likely to be satisfied with their jobs when their organizations have variable pay systems in place. This suggests—while variable pay systems may crowd out public service motivation for those highly motivated—performance-related pay is particularly important to those without high degrees of public service motivation. If true, public service motivation scholars are arguably correct in calling for greater attention to be placed on selecting employees with high public service motivation. However, in the absence of organizations staffed only with high public service motivation employees, it may be more appropriate for organizations to ensure employees have opportunities to meet both their intrinsic and extrinsic motives. Rather than focus solely on selection processes, managers and human resources specialists may be better served by determining the broader motivational needs of their workers and subsequently designing HR and managerial systems reflecting those interests.

Because simply exploring the relationship between variable pay and public service motivation provides little insight into the performance-related consequences of such systems, Model Two is included in the analysis. Although Model Two examines the effects of variable pay systems on job satisfaction, previous research clearly demonstrates

employee job satisfaction is a key determinant in organizational performance (Moynihan and Pandey 2008; Bertelli 2007; Felps, Mitchell, Heckman, Lee, Holtom, and Harman 2009; Kim 2005). With respect to crowding out theory, predicted probabilities for Model Two provide an interesting story. Results suggest—regardless of the level of public service motivation—employees are most likely to have high job satisfaction in organizations with variable pay systems. Moreover, employees with high public service motivation, who are working in cities with pay-for-performance systems, seem to have the highest level of job satisfaction. This suggests, while variable pay systems may crowd out intrinsic motivation in those employees with high public service motivation, variable pay systems may also translate into other benefits for employees, such as higher overall levels of job satisfaction.

As further evidence of this trend, results indicate the probability an employee will have average or below average job satisfaction is greatest in cities without variable pay systems. Moreover, the probabilities of expressing average or below average job satisfaction increase as an individual's level of public service motivation decreases—meaning, for instance, employees with low public service motivation in cities with standard compensation systems are more likely to report having below average job satisfaction than employees with higher levels of public service motivation or in cities with variable pay systems.

Admittedly, because the current study relies on cross-sectional data limited to the uppermost levels of city hierarchies, these results should be treated with caution. It is impossible to capture the dynamic relationships likely to occur as a result of the interaction between variable pay systems and public service motivation. However, results from the models tested here seem to provide mixed support for the crowding out effect. First,

evidence suggests variable pay systems may indeed crowd out public service motivation in employees driven primarily by public service motives and interests. However, those employees with lower public service motivations appear to value variable pay systems. Second, results suggest employees, on whole, are more likely to be satisfied in their jobs when their cities have variable pay systems in place. Together, these factors would seem to support the use of variable pay systems in cities—at least as variable pay systems are currently structured.

CONCLUSIONS

This article has sought to expand upon the current debate involving the relationship between performance-related pay and public service motivation. Two approaches are used to examine how variable pay influences public service motivation and job satisfaction among a sample of city managers, assistant city managers, and department heads. Findings support the argument that variable pay systems can crowd out public service motivations. However, results also present a much more complicated picture. Variable pay systems seem to primarily crowd out the intrinsic motives of those with high levels of public service motivation. However, employees without high public service motivation appear to value variable pay systems. Moreover, evidence suggests the crowding effect has little influence on overall job satisfaction. Instead, employees—on whole—are most satisfied when variable pay systems are present.

These findings indicate the relationships between variable pay and intrinsic motivation are quite dynamic and highly contextualized. It also opens up the discussion on performance-related pay and public service motivation to a wider range of possibilities. For instance, it is possible those factors thought to reduce the effectiveness of variable pay

systems in the public sector (e.g., the inability of the public sector to provide high-powered financial rewards) actually limit the harmful effects of performance-related pay on intrinsic motives. In other words, public sector constraints might actually prevent—in certain circumstances—a net loss in motivation. This is not intended to suggest extrinsic mechanisms are a better starting point for coordinating and controlling human action and behavior. Instead, it demonstrates much more research is needed on the interaction between public service motivation and variable pay—confirming calls by Perry and Houston for continued attention on performance-related pay both generally and with respect to intrinsic motivation more specifically.

Figure 1. Predicted Probabilities. Public Service Motivation.

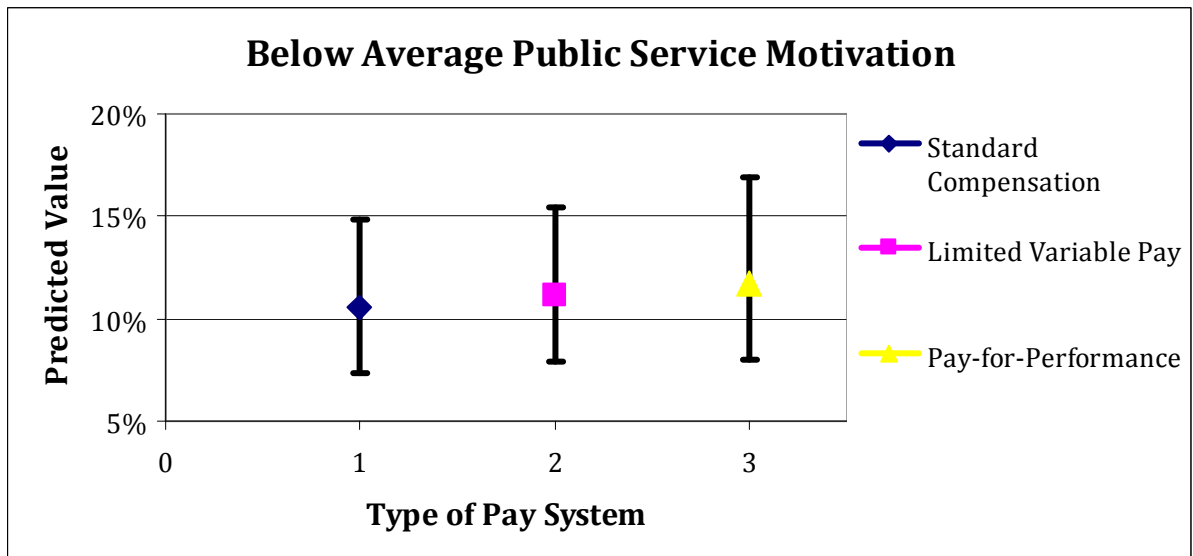
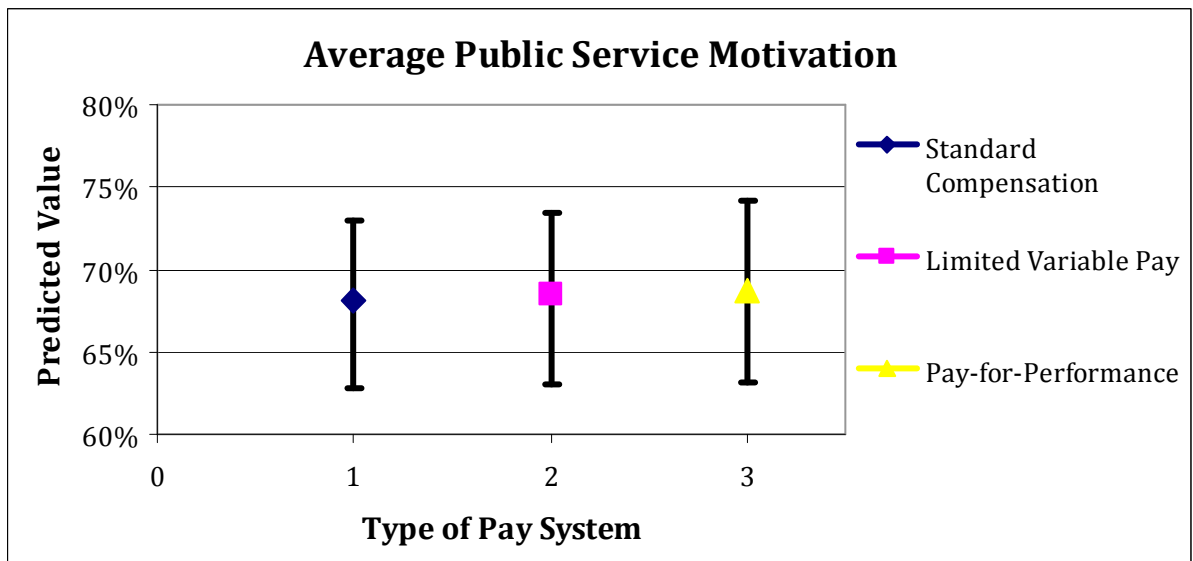
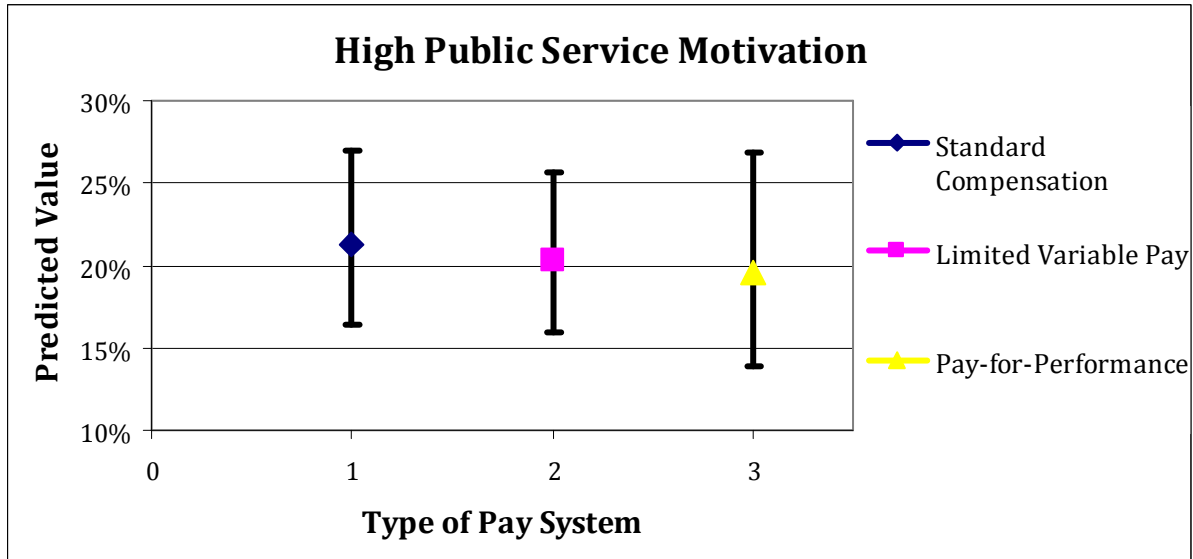


Table 1. NASP-IV Sample Characteristics (n = 1,538).

	Percent
Gender	
Female	29.4
Male	70.6
Education	
Some College	2.9
Bachelors	32.5
Masters in Public Affairs (MPA, MPP)	37.2
Other Graduate Degree	27.4
Race	
Hispanic Origin	4.1
Black or African American	6.7
White	85.9
Asian	2.3
Salary	
Less than \$50,000	1.4
\$50,000 to \$75,000	6.9
\$75,000 to \$100,000	23.5
\$100,000 to \$150,000	50.2
\$150,000 or more	18.1
Functional Specialization	
City Manager /CAO	14.0
Deputy or Assistant City Manager	14.6
Finance/Budgeting	12.3
Public Works	11.6
Personnel/HR	10.9
Economic Development	7.7
Parks & Recreation	13.7
Planning	10.9
Community Development	4.3

Table 2. Ordered Logit Results. Public Service Motivation.

	Public Service Motivation			Cutpoints	
	Coefficient	Standard Error	P-Value	Cut (Value)	Standard Error
Independent Variables					
Variable Pay System	-0.056	0.098	0.562	1 (1.491)	0.688
Reward Satisfaction	0.270	0.125	0.032	2 (4.958)	0.738
Goal Clarity	0.370	0.203	0.068		
Role Clarity	0.401	0.233	0.086		
Human Resources Red Tape	-0.054	0.186	0.770		
Person-Organization Fit	0.580	0.169	0.001		
Job Satisfaction	0.048	0.142	0.735		
n = 462					
Pseudo R ² = 0.0731					

Table 3. Predicted Probabilities. Public Service Motivation.

	Standard Compensation		Limited Variable Pay System		Pay-for-Performance	
	Mean	95% Confidence Interval	Mean	95% Confidence Interval	Mean	95% Confidence Interval
Public Service Motivation						
High Public Service Motivation	21.30%	16.48% 26.91%	20.36%	15.99% 25.59%	19.54%	13.82% 26.82%
Average Public Service Motivation	68.08%	62.76% 72.92%	68.50%	62.98% 73.46%	68.70%	63.15% 74.13%
Low Public Service Motivation	10.60%	7.34% 14.82%	11.12%	7.96% 15.38%	11.74%	7.99% 16.92%

Table 4. Ordered Logit. Job Satisfaction, Public Service Motivation, and Variable Pay.

	Job Satisfaction			Cutpoints	
	Coefficient	Standard Error	P-Value	Cut (Value)	Standard Error
Independent Variables					
Public Service Motivation	0.119	0.195	0.540	1 (5.720)	0.885
Variable Pay System	0.209	0.102	0.041	2 (7.043)	0.903
Reward Satisfaction	0.048	0.112	0.665		
Goal Clarity	0.120	0.173	0.487		
Role Clarity	1.764	0.237	0.000		
Human Resources Red Tape	0.138	0.177	0.436		
Person-Organization Fit	0.944	0.170	0.000		
n = 462					
Pseudo R ² = 0.2074					

Table 5. Predicted Values. Job Satisfaction, Public Service Motivation, and Variable Pay.

	Standard Compensation		Limited Variable Pay System		Pay-for-Performance	
	Mean	95% Confidence Interval	Mean	95% Confidence Interval	Mean	95% Confidence Interval
High Satisfaction						
High Public Service Motivation	57.09%	46.66%	62.13%	51.96%	66.84%	54.51%
Average Public Service Motivation	54.20%	47.83%	59.37%	53.55%	64.29%	55.60%
Low Public Service Motivation	51.20%	39.61%	56.39%	45.07%	61.40%	48.37%
Average Satisfaction						
High Public Service Motivation	26.04%	19.93%	23.73%	17.88%	21.28%	15.00%
Average Public Service Motivation	27.33%	22.23%	25.12%	20.28%	22.68%	17.34%
Low Public Service Motivation	28.23%	21.54%	26.26%	20.11%	23.97%	17.30%
Below Average Satisfaction						
High Public Service Motivation	16.85%	11.51%	14.12%	9.66%	11.86%	7.31%
Average Public Service Motivation	18.46%	14.93%	15.49%	12.39%	13.02%	9.21%
Low Public Service Motivation	20.56%	13.25%	17.33%	11.09%	14.61%	8.62%

Works Cited

- Alonso, Pablo, and Gregory B. Lewis. 2001. Public service motivation and job performance: Evidence from the federal sector. *American Review of Public Administration* 31 (4): 363-380.
- Bandura, Albert. 1997. *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman.
- Bandura, Albert, and Edwin A. Locke. 2003. Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology* 88: 87-99.
- Bertelli, Anthony M. 2007. Determinants of bureaucratic turnover intention: Evidence for the Department of the Treasury. *Journal of Public Administration Research and Theory* 17: 235-258.
- Bright, Leonard. 2008. Does public service motivation really make a difference on the job satisfaction and turnover intentions of public employees? *The American Review of Public Administration* 38: 149-166.
- Buchanan, Bruce E. 1975. Government managers, business executives, and organizational commitment. *Public Administration Review* 34 (4): 339-347.
- Bush, George W. 2002. *The president's management agenda, FY 2002*. Washington, D.C.: Executive Office of the President, Office of Management and Budget. S/N 041-001-00568-4.
- Cacioppe, Ron, and Philip Mock. 1984. A comparison of the quality of work experience in government and private organizations. *Human Relations* 37 (11): 923-940.
- Cammann, C., M. Fichman, D. Jenkins, and J. Klesh. 1979. The Michigan organizational assessment questionnaire. In *The experience of work: A compendium and review of 249 measures and their use*, eds., J. D. Cook, S. J. Hepworth, T. D. Wall, & P. B. Warr (1981). London: Academic Press.
- Cook, John D., Susan J. Hepworth, Toby D. Wall, and Peter B. Warr. 1981. *The experience of work*. London: Academic Press.
- Crewson, Philip E. 1997. Public-service motivation: Building empirical evidence of incidence and effect. *Journal of Public Administration Research and Theory* 4: 499-518.
- Deci, Edward L., Richard Koestner, and Richard M. Ryan. 1999. A meta-analytic review of experiments examining the effects of extrinsic rewards and intrinsic motivation. *Psychological Bulletin* 125 (6): 627-668.
- Deci, Edward L., and Richard M. Ryan. 1985. *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.

- Deckop, John R., and Carol C. Cirka. 2000. The risk and reward of a double-edged sword: Effects of a merit pay program on intrinsic motivation. *Nonprofit and Voluntary Sector Quarterly* 29 (3): 400-418.
- Felps, Will, Terence R. Mitchell, David R. Heckman, Thomas W. Lee, Brooks C. Holtom, and Wendy S. Harman. 2009. Turnover contagion: How coworkers' job embeddedness and job searching behaviors influence quitting. *Academy of Management Journal* 52 (3): 545-561.
- Frank, Sue A., and Gregory B. Lewis. 2004. Government employees: Working hard or hardly working? *American Review of Public Administration* 34 (1): 36-51.
- Frederickson, H. George. 1997. *The spirit of public administration*. San Francisco, CA: Jossey-Bass.
- Frey, Bruno S. 1997. *Not just for the money: An economic theory of personal motivation*. Brookfield, VT: Edward Elgar Publishing Company.
- Frey, Bruno S, and Felix Oberholzer-Gee. 1997. The cost of price incentives. *American Economic Review* 87 (4): 746-755.
- Frey, Bruno S., and Margit Osterloh. 2002. Motivation—A dual-edged factor of production. In *Successful management by motivation: Balancing intrinsic and extrinsic incentives*, eds., Bruno S. Frey and Margit Osterloh, 55-88. New York: Springer-Verlag.
- Frey, Bruno S., and Margit Osterloh. 2005. Yes, managers should be paid like bureaucrats. *Journal of Management Inquiry* 14: 96-111.
- Hartman, Robert W., and Arnold R. Weber. 1980. *The rewards of public service*. Washington, D.C.: Brookings Institution.
- House, Robert J., and John R. Rizzo. 1972. Toward the measurement of organizational practices. *Journal of Applied Psychology* 56 (5): 388-396.
- Houston, David J. 2000. Public-service motivation: A multivariate test. *Journal of Public Administration Research and Theory* 10 (4): 713-727.
- Houston, David J. Motivating knights or knaves? Moving beyond performance-related pay for the public sector. Retrieved 1 September 2009 from <http://www.aspanet.org/scriptcontent/custom/staticcontent/t2pdownloads/HoustonCommentary.pdf>.
- Ingraham, Patricia W. 1993. Of pigs in pokes and policy diffusion: Another look at pay-for-performance. *Public Administration Review* 66 (4): 486-495.

International Public Management Association for Human Resources (IPMA-HR). 2007. *2007 total compensation benchmarking survey*. Retrieved 1 September 2009 from <http://www.ipma-hr.org/pdf/Benchmarking.pdf>.

Jurkiewicz, Carol L., Tom K. Massey, and Roger G. Brown. 1998. Motivation in public and private organizations: A comparative study. *Public Productivity & Management Review* 21 (3): 230-250.

Kellough, J. Edward, and Haoran Lu. 1993. The paradox of merit pay in the public sector: Persistence of a problematic procedure. *Review of Public Personnel Administration* 13 (2): 45-64.

Khojasteh, Mak. 1993. Motivating the private vs. public sector managers. *Public Personnel Management* 22 (3): 391-401.

Kilpatrick, Franklin P., Milton C. Cummings Jr., and M. Kent Jennings. 1964. *The image of the federal service*. Washington, D.C., Brookings Institution.

Kim, Soonhee. 2005. Factors affecting state government information technology employee turnover intentions. *American Review of Public Administration* 35 (2): 137-156.

Kim, Sangmook. 2005. Individual-level factors and organizational performance in government organizations. *Journal of Public Administration Research and Theory* 15 (2): 245-262.

Kim, Sangmook. 2006. Public service motivation and organizational citizenship behavior. *International Journal of Manpower* 27 (8): 722-740.

King, Gary, Michael Tomz, and Jason Wittenberg. 2000. Making the most of statistical analyses: Improving interpretation and presentation. *American Journal of Political Science* 44 (2): 347-61.

Lawler, Edward E., III. (1971). *Pay and organizational effectiveness: A psychological view*. New York, NY: McGraw-Hill.

Le Grand, Julian. 2003. *Motivation, agency, and public policy: Of knights and knaves, pawns and queens*. Oxford: Oxford University Press.

Locke, Edwin A., and Gary P. Latham. 2002. Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist* 57: 705-717.

Long, J. Scott. 1997. *Regression models for categorical and limited dependent variables*. Thousand Oaks, CA: SAGE Publications.

Losey, Stephen. June 1. 2009. Performance pay for all feds. *FederalTimes.com*. Retrieved 1 September 2009 from <http://www.federaltimes.com/index.php?S=4114557>.

Milkovich, George T., and Alexandra K. Wigdor. 1991. *Pay for performance: Evaluating performance appraisal and merit pay*. Washington, DC: National Academy Press.

Moynihan, Donald P. 2008. The normative model in decline? Public service motivation in the age of governance. In *Motivation in public management: The call of public service*, eds., James L. Perry and Annie Hondeghem, 247-267. New York: Oxford University Press.

Moynihan, Donald P., and Sanjay K. Pandey. 2008. The ties that bind: Social networks, person-organization value fit, and turnover intention. *Journal of Public Administration Research and Theory* 18: 205-227.

Naff, Katherine C., and John Crum. 1999. Working for America: Does public service motivation make a difference? *Review of Public Personnel Administration* 19: 5-15.

Newstrom, John F., William E. Reif, and Robert M. Monczka. 1976. Motivating the public employee: Fact vs. fiction. *Public Personnel Management* 5 (1): 67-72.

Pandey, Sanjay K., and Hal G. Rainey. 2006. Public managers' perceptions of organizational ambiguity: Analyzing alternative models. *International Public Management Journal* 9 (2): 85-112.

Pandey, Sanjay K., and Patrick G. Scott. 2002. Red tape: A review and assessment of concepts and measures. *Journal of Public Administration Research and Theory* 12 (4): 553-580.

Pandey, Sanjay K., and Edmund C. Stazyk. 2008. Antecedents and correlates of public service motivation. In *Motivation in public management: The call of public service*, eds., James L. Perry and Annie Hondeghem, 101-117. New York: Oxford University Press.

Pandey, Sanjay K., and Bradley E. Wright. 2006. Connecting the dots in public management: Political environment, organizational goal ambiguity, and the public manager's role ambiguity. *Journal of Public Administration Research and Theory* 16 (4): 511-532.

Pandey, Sanjay K., Bradley E. Wright, and Edmund C. Stazyk. 2007. Understanding organizational commitment: A public sector model. Paper prepared for the presentation at the 65th Annual Meeting of the Academy of Management, August, Philadelphia, PA.

Perry, James L. 1996. Measuring public service motivation: An assessment of construct reliability and validity. *Journal of Public Administration Research and Theory* 16 (4): 511-532.

Perry, James L. 1997. Antecedents of public service motivation. *Journal of Public Administration Research and Theory* 7 (2): 181-197.

Perry, James L, Trent Engbers, and So Yun Jun. 2009. Back to the future? Performance-related pay, empirical research, and the perils of persistence. *Public Administration Review* 69 (1): 39-51.

Perry, James L., and Annie Hondeghem (Eds.). 2008. *Motivation in public management: The call of public service*. New York: Oxford University Press.

Perry, James L., Debra Mesch, and Laurie Paarlberg. 2006. Motivating employees in a new governance era: The performance paradigm revisited. *Public Administration Review* 66 (4): 505-514.

Perry, James L., and Lois R. Wise. 1990. The motivational bases of public service. *Public Administration Review* 50 (3): 367-373.

Rainey, Hal G. 1982. Reward preferences among public and private managers: In search of the service ethic. *American Review of Public Administration* 16: 288-302.

Rainey, Hal G. 1983. Public agencies and private firms: Incentive structures, goals, and individual roles. *Administration and Society* 15: 207-242.

Rainey, Hal G. 1989. Public management: Recent research on the political context and managerial roles, structures, and behaviors. *Yearly Review of Management of the Journal of Management* 15: 229-250.

Rainey, Hal G. 2003. *Understanding and managing public organizations* (3rd Ed.). San Francisco, CA: Jossey-Bass.

Rainey, Hal G. 2006. Reform trends at the federal level with implications for the states: The pursuit of flexibility and the human capital movement. In *Civil service reform in the states: Personnel policy and politics at the subnational level*, eds., J. E. Kellough & L. G. Nigro, 33-55. Albany, NY: State University Press of New York.

Rainey, Hal G., Sanjay K. Pandey, and Barry Bozeman. 1995. Public and private managers' perceptions of red tape. *Public Administration Review* 55: 567-574.

Rawls, J. R., R. A. Ulrich, and O. T. Nelson. 1975. A comparison of managers entering or reentering the profit and nonprofit sectors. *Academy of Management Journal* 18 (3): 616-623.

Rizzo, John R., Robert J. House, and Sidney I. Lirtzman. 1970. Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, 15, 150-163.

Sanders, Robert M. 2004. GeorgiaGain or GeorgiaLoss? The great experiment in state civil service reform. *Public Personnel Management* 33 (2): 151-164.

Seashore, S., E. Lawler, P. Mirvis, and C. Cammann. 1982. *Observing and measuring organizational change: A guide to field practice*. New York, NY: Wiley.

Spector, Paul E. 1985. Measurement of human service staff satisfaction: Development of the job satisfaction survey. *American Journal of Community Psychology* 13 (6): 693-713.

Steijn, Bram. 2008. Person-environment fit and public service motivation. *International Public Management Journal* 11 (1): 13-27.

Tomz, Michael, Jason Wittenberg, and Gary King. 2001. *CLARIFY: Software for interpreting and presenting statistical results. Version 2.0*. Cambridge, MA: Harvard University, June 1. <http://gking.harvard.edu>.

Weibel, Antoinette, Katja Rost, and Margit Osterloh. 2007. Crowding-out of intrinsic motivation—opening the black box. Retrieved 1 September 2009 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id957770#PaperDownload.

Wittmer, Dennis. 1991. Serving the people or serving for pay. Reward preferences among government, hybrid sector and business managers. *Public Productivity & Management Review* 14 (4): 369-383.

Wright, Bradley E. 2001. Public sector work motivation: Review of the current literature and a revised conceptual model. *Journal of Public Administration Research and Theory* 11 (4): 559-586.

Wright, Bradley E. 2007. Public service and motivation: Does mission matter? *Public Administration Review* 67 (1): 54-64.

Wright, Bradley E., and Sanjay K. Pandey. 2008. Public service motivation and the assumption of person organization fit: Testing the mediating effect of value congruence. *Administration & Society* 40: 502-521.