

Running Head: Motivations, Socialization, and Outcomes

**A Multi-Level Analysis of Work Motivation and Organizational Socialization:
Probing the Internalized Motivational Effects among Public Managers**

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Abstract

Based on the different sets of theoretical frameworks, this study empirically tested hypotheses on the effects of two types of work motivation (i.e., intrinsic and extrinsic motivation) and four types of organizational socialization variables on three outcome variables (i.e., job involvement, red tape, and organizational effectiveness). Intrinsic motivation is significantly associated with public managers' job involvement, perceptions of red tape, and organizational effectiveness. Also, certain types of social communications mentoring are closely related to the outcomes. The results of cross-interaction effects between motivation and socialization on outcome variables support the self-determination theory (SDT) prediction suggesting that when public managers are more involved with the different types of socialization behaviors, the relationship between extrinsic motivation and three outcome variables becomes more pronounced. That is, social network mediating actors provide autonomous and discretionary environments with extrinsically motivated public managers.

Keywords: work motivations; organizational socialization; social communications; mentoring; job involvement; job designs; public human resource management; organizational behavior

Introduction

Human motivation refers to “what energizes a person’s behavior, what directs it, and what maintains and sustains it” (Porter & Miles, 1974, p.546). Within complex, ambiguous, and heterogeneous work environments, motivating employees to be both positive and effective in performing their work remains a crucial and sensitive challenge for managers (see Rainey, 2003). Also, in organizations, selecting, retaining, and managing highly motivated people are primary human resource (HR) functions to improve organizational outcomes. In the public sector, as Robert Behn (1995) suggested, one of the “big questions” of public human resource management is how to effectively and appropriately enhance the level of employees’ work motivation in the public sector, mainly aiming at increasing job and organization performance and effectiveness at the micro-level as well as ultimately pursuing public-based social purposes at the macro-level.

Reviews of the previous literature reveal that there are different kinds of work motivation within organizations and suggest that two of these are the main causes of human behavior in organizations – intrinsic motivation and extrinsic motivation. Especially from the public HR management perspective, public service motivation (PSM) is characterized as a reliance on intrinsic rewards (e.g., job satisfaction, sense of accomplishment, and duty of a public employee) over extrinsic rewards (e.g., pay raise, a promotion, job security, and, performance ratings) (Crewson, 1997). The research has consistently suggested that due to a result of recruitment, self-selection, and the process of socialization influenced or accompanied by public-spirited organizational culture and leadership, public-sector employees are less likely to be interested in extrinsic rewards and more likely to perceive intrinsic rewards as important than are private sector employees; furthermore, they are affectively committed and highly motivated by a concern for the community and a desire to serve the public interest or intrinsic values while some

are more motivated extrinsically (e.g., see Crewson, 1997; Houston, 2000, 2005; Park & Rainey, 2007).¹

According to contingency theory, different types of internal and external factors as crucial contingencies play an important role (i.e., the role of social institutions) in affecting motivational behaviors (Heffron, 1989; Perry, 2000; Rainey, 2003; Thompson, 1967). The organizational contingencies may include job design and characteristics; incentive systems; organizational goals and strategies; and other work environment factors including technologies, resources, and political or managerial interventions. Specifically, social exchanges and communications among organizational constituents – e.g., social networks within organizations – or different types of organizational institutions – e.g., rules, regulations, cultures, and norms – may affect employees' motivation and hence organizational consequences. Furthermore, work collaboration based on mutual communications might ensure cultural assimilation among employees and might change and transform their motivation styles into being more adaptive to their work environment. That is, we can expect that the presence of certain types of collaborative network systems or assimilative organization cultures could influence employees' motivational structures and could change the relationship between motivation and organizational outcomes in a more positive way.

The purpose of this study is threefold: Based on the different sets of theoretical frameworks, first, this study aims to test hypotheses on the effects of two types of work motivation – i.e., intrinsic and extrinsic motivation – on three outcome variables – i.e., job involvement, red tape, and organizational effectiveness (**hypotheses 1 and 2**). Second, this study also examines the causal relationship between four types of organizational socialization – i.e., intra- or inter-communications and mentoring – with the three outcome variables (**hypotheses 3, 4, 5, and 6**). Third, most importantly, by probing the cross-interaction effects between

employees' motivation (individual level) and organizational socialization (organizational level) on outcome variables, this study tests propositions which are based on Edward L. Deci and Richard M. Ryan's (1985) self-determination theory (SDT) (**hypotheses 7 and 8**). Finally, this study provides a brief discussion of both the research and practical implications of the empirical findings.

Theories and Hypotheses

Work Motivation in Public Organizations: Intrinsic and Extrinsic Motivation

As motivation cannot be a unitary construct, people not only have different levels of motivation, but also have varied types (or orientation) of motivation (Ryan & Deci, 2000a). The distinction between *intrinsic and extrinsic* motivation has been popularly introduced in academic disciplines – e.g., organizational and educational psychology – for the sake of probing any discrete antecedent or consequence of these two general types of motivation. Intrinsic or internal motivation refers to “behaviors for which there is no apparent reward except the activity itself” or “the doing of an activity for its inherent satisfactions rather than for some separable consequence (e.g., an inclination for psychological rewards, feelings of accomplishment, or working for public interests)” whereas extrinsic motivation is defined as “a construct that pertains whenever an activity is done in order to attain some separable outcome” and “behaviors in which an external controlling variable can be readily identified” (e.g., an inclination for explicit and tangible rewards, incentive and salary, threat, or surveillance) (Cameron & Pierce, 2002, p.12; Lepper & Greene, 1975; Rainey, 2003; Ryan & Deci, 2000a, pp. 56-60). Since these two types of motivation, which are generally engendered from personal and social experience, may lead to different organizational results, it is important to find important social and environmental factors in organizations. Cognitive evaluation theorists have suggested that

extrinsic reward systems or external contingent factors can be harmful and detrimental rather than helpful to increase employee's intrinsic motivation or job satisfaction. Instead, they emphasize social and moral reward systems and the potential power of *feeling of competence, a sense of autonomy, and an internal perceived locus of causality* (e.g., see Deci & Ryan, 1985). On the other hand, in social learning (cognitive) theory, incentive functions should be important because extrinsic incentives and rewards as instrumental values may significantly influence human behavior and play a positive role in human learning, self-directiveness, and self-motivation. This approach further suggests that "human behavior is extensively regulated and adapted by its consequences" and that human activities should be understood with considering the expectations of future outcomes of actions, i.e., rewards, punishment, and compensations (see Bandura, 1986, p. 228; Cameron & Pierce, 2002).

Within the context of the public sector, it is believed that some public administrators have strong motives to perform meaningful public and social service, which ultimately advances the public interest – called public service motivation (PSM) (Brewer & Selden, 1998, pp. 417-418). Previous research on PSM and reward motivators provides some support for the argument that public employees are characterized by a public service and intrinsic motive while private counterparts more value extrinsic reward systems (e.g., see Crewson, 1997; Houston, 2000). In a similar vein, Perry and Wise (1990) hypothesized that public agencies with many high-PSM employees would depend less on utilitarian incentives. Though utilitarian reward systems might work well in private organizations, where employees are driven largely by rational choice, they argued that public organizations would need to emphasize "normative and affectual incentives" (p. 371). Indeed, some research indicates that an overemphasis on extrinsic rewards (e.g., pay and benefits) can be counterproductive, actually making workers less productive, particularly if

their original motivations are “primarily intrinsic” or service-oriented (Crewson, 1997; Deci, 1971, p.108; Kohn, 1993).² In this regard, even in the public domains, we could argue that there is much variation in public employees’ perception about public-sector motivation (Gabris & Simo, 1995). In other words, there could be two distinct motivational structures in public service: 1) employees with intrinsic motivation and 2) employees with extrinsic motivation.

The logic of dichotomizing work motivation in the public sector into two separate and distinct continua in this research is mainly based on Herzberg’s two-factor theory of work motivation (1959), which suggests that work motivation contains two separate and independent dimensions, which can be called *hygiene factors (dissatisfiers) and intrinsic factors (motivators)*, that cannot be staged on the same continuum. The hygiene factors as the job context factors, including extrinsic incentives or rewards – e.g., pay, job security, and physical working conditions – indicate issues that give external effects to the job. These factors cause dissatisfaction when they are not present, but because they are external, they are not positively strong enough to motivate employees even when they are present. On the other hand, on the intrinsic factor dimensions, the motivators address values of intrinsic rewards to employees in organizations – e.g., recognition or affective and normative motivators. When they exist, motivators can strongly and positively motivate employees because of their association with the need for self-actualization— the ultimate intrinsic drive (Tietjen and Myers, 1998). However, even when these motivators are absent, they do not greatly dissatisfy. Consequently, as Herzberg argues, “motivators are the real sources of stimulation and motivation for employees, and managers must avoid the negative techniques of controlling and directing employees and should instead design work to provide for the individual growth, achievement, recognition, and other elements people need, which are represented by the motivators” (see Rainey, 2003, p. 253). In

sum, while hygiene factors can only prevent dissatisfaction, motivators should be critical factors to enhance job satisfaction or job involvement levels, thereby increasing the level of organizational effectiveness (Rainey, 2003). Based upon these theoretical similarities, intrinsic motivation is hypothesized to function as *motivators*, whereas extrinsic motivation is supposed to function similar to *hygiene factors*.

Motivation and Organizational Outcomes

In this study three outcome variables were included: job involvement, red tape, and organizational effectiveness. Drawing on the previous research on the role of PSM in organizational outcomes (e.g., see Brewer & Selden, 2000; Crewson, 1997; Lewis & Frank, 2002; Perry & Wise, 1990; Rainey & Steinbauer, 1999; Wilson, 1999) as well as Herzberg's two-factor theory, this study analyzes how these two types of work motivation are differently associated with these organizational consequences. Job involvement is "the degree to which a person identifies with his or her job, actively participates in it, and considers his or her performance important to self-worth" (Robbins, 2003, p.72). As the empirical findings by Moon (2000) suggested, it is expected that intrinsic motivational factors would be likely to provide more positive effects on job involvement or job satisfaction than extrinsic motivational factors would (see also Naff & Crum, 1999; Rainey, 2003). Organizational effectiveness refers to both outcome and output measures – outputs are "the immediate results of organization activities" and outcomes are "measures of the extent that organizational attain their goals or ultimate purposes" (Berman, 2006, p.6). Organizational effectiveness and performance should be more positively associated with the level of intrinsic work motivation than extrinsic work motivation as intrinsically motivated public employees perform well and more actively pursue their immediate or long-term values and objectives in their organizations (Crewson, 1997; Perry & Wise, 1990).

Red tape is defined as ineffective and excessive rules, regulations, and procedures that “do not advance the legitimate purposes the rules were intended to serve” and reduce organizational performance and effectiveness (Bozeman, 2000, p. 12; Dehart-Davis & Pandey, 2005). Red tape behaviors can be affected by several individual and organizational antecedents. Specifically, in terms of the relationship between motivation and red tape, Scott and Pandey (2005) reported that public managers with higher levels of PSM were less likely to perceive high levels of red tape compared with public managers who have lower levels of PSM. This finding suggests that in state agencies, public service-oriented or intrinsically oriented motivation would play a crucial role in not perceiving organizational rules and institutions as being burdensome or unnecessary procedural barriers (p. 174). Furthermore, these attitudinal behaviors would enhance the level of job involvement, effectiveness, and performance in the long run. In sum, at the individual level, two types of work motivation were examined in this study: *intrinsic and extrinsic work motivation*.³ The following hypotheses address the impact of public managers’ intrinsic and extrinsic motivation on their job involvement, red tape, and organizational effectiveness.

Hypothesis 1 (Intrinsic motivation): Increasing levels of public managers’ intrinsic motivation (as a motivator) will be significantly and positively associated with the level of job involvement and organizational effectiveness while it will be significantly and negatively associated with the perception of red tape.

Hypothesis 2 (Extrinsic motivation): Compared with intrinsic motivation effects, increasing levels of public managers’ extrinsic motivation (as a hygiene factor) will be less significantly and positively associated with the level of job involvement and organizational effectiveness while it will be less significantly and negatively associated with the perception of red tape.

Socialization in Public Organizations: Social Communications and Mentoring Effects

Social networks in organizations are composed of the pattern of ties linking a set of individuals or social actors related to the concept of “organizational socialization” which is a

“process by which an individual comes to appreciate the values, abilities, expected behaviors, and social knowledge essential for assuming an organizational role and for participating as an organizational member” (Louis, 1980, pp. 229-230). The socialization process includes three phases, “anticipatory socialization,” “encounter,” and “change and acquisition” (Feldman, 1981, p. 310; Porter *et al.*, 1975). All these processes are expected to play a pivotal role in establishing successful and satisfying work relationships among organizational members, which can ultimately help to enhance the level of organizational effectiveness and performance (Feldman, 1981; Fisher, 1986). The whole entity of the structures and processes of social networks and organizational socialization can be also conceptualized by the social capital theoretical perspectives. Social capital refers to any type of social structure that creates, develops, and facilitates the individual actions and decisions as well as generates more autonomous motivational behaviors within that social structure (Coleman, 1990; Crossan *et al.*, 1995; Seibert, Kraminer, & Liden, 2001).

Organizational social capital is created especially when the inter- or intra-relations among social constituents are willing to communicate and transform in a way that promote instrumental actions and facilitate access to social resources embedded within organizations (Coleman, 1990). The impact of informal or formal social networks within or among work groups has important practical implications for organizations because the specific network structures and interactions may lead social actors (e.g., organizational constituents) to have more access to different kinds of resources and may have the potential to increase or decrease the level of organizational performance, effectiveness, or other job attitudes (Balkundi & Harrison, 2006; Brass, 1984). That is, social networks in organizations are one of the principal agents which help employees to share their information and knowledge with other colleagues without relying on rule-based and

hierarchical administrative systems. Social networking in organizations can be developed by interpersonal and organizational communication, individual and group interactions (contacts), mentoring behaviors for employees, and participation in voluntary activities (Kim & Lee, 2006; Leonard & Sensiper, 1998; Levinthal & March, 1993). The previous research findings suggest that more power to access the relevant information and advice by using formal or informal social networks or social communications in organizations would increase psychological empowerment (Spreitzer, 1996), enhance the level of job involvement, and positively affect job attitudes (Hackman & Oldham, 1980; Spreitzer, 1996).

Another distinct type of organizational culture shown in the social network structure and organizational socialization process is mentoring. As Kram (1985) suggested, mentoring can be defined as a developmental and mutual relationship in which “a less experienced organization member receives help and guidance from a more experienced member whose intent is to provide career and mental support” (Seibert, Kraimer, & Liden, 2001, p. 220). Regarding mentoring effects, Kram’s mentoring theory (1985) suggests that the mentoring process can furnish people two principal mentor functions – i.e., career development and psychological functions – and that both functions are positively associated with career and job attitudes in organizations (Ragins, Cotton, & Miller, 2000).

Organizational Socialization and Outcomes

The Feldman’s contingency theory of socialization (1976, 1981) suggests that different types of the socialization process (e.g., congruence, accommodation, communication, and adjustment to group norms and values) are closely related to several behavioral and affective outcomes including job satisfaction and job involvement. At the organizational level, based on the framework of organizational socialization and the social capital theory, this study probes four

different types of organizational socialization in state agencies as main predictors: 1) intra-social communication among employees within state agencies, 2) inter-social communication with government agencies and institutions, 3) inter-social communication with private companies, and 4) mentoring effects. It is hypothesized that these social communications and mentoring as the main components of the socialization process are positively associated with job involvement and organizational effectiveness while negatively associated with red tape.

Hypothesis 3 (Intra-social communications): The high level of social communications within state agencies will be positively associated with job involvement and organizational effectiveness whereas it will be negatively associated with red tape.

Hypothesis 4 (Inter-social communications): The high level of social communications with government agencies will be positively associated with job involvement and organizational effectiveness whereas it will be negatively associated with red tape.

Hypothesis 5 (Inter-social communications): The high level of social communications with private sectors will be positively associated with job involvement and organizational effectiveness whereas it will be negatively associated with red tape.

Hypothesis 6 (Mentoring): Mentoring in state agencies will be positively associated with job involvement and organizational effectiveness whereas it will be negatively associated with red tape.

Self-Determination Theory (SDT): The Logic of the Interactive Behaviors in Organizations

As suggested before, the two types of work motivation – intrinsic and extrinsic motivation – may have different cognitive processes, distinctive social roles, and contrasting organizational results. The cognitive evaluation theory (CET) framework mainly focuses on intrinsic motivation and suggests that intrinsic motivation is affected and changed by specific organizational exogenous factors such as regulations, autonomy, events, or communications, and hence it may have different behavioral outcomes in organizations. That is, according to CET, the degree of intrinsic motivation can be facilitated or diminished depending on the different sets of organizational environments (Ryan & Deci, 2000b).⁴

On the other hand, the major contribution of self-determination theory (SDT) is to provide a more diversified approach to motivation structures and processes by investigating numerous social-contextual conditions that hinder or facilitate the processes of self-motivation and psychological development within organizations (Deci & Ryan, 1985; Ryan & Deci, 2000b). Especially, SDT proposes that extrinsic motivation has variations in terms of its “relative autonomy” in intentional behaviors (Heider, 1958; Ryan & Connell, 1989). Regarding motivational dynamics within SDT, Deci and Ryan (1985) introduced the self-determination continuum (from amotivation, extrinsic motivation, and to intrinsic motivation), which explicates the different forms of extrinsic motivation and the contextual influences that either develop or thwart “internalization and integration of the regulation for these behaviors” (Ryan & Deci, 2000b, p.72). In the continuum, the extrinsically motivated behaviors include four separate regulatory styles – 1) external regulation, 2) introjected regulation, 3) identified regulation, 4) and integrated regulation (from least autonomous to most autonomous motivation), all of which could be differently affected by external factors (see Figure 1). Although integrated regulation (i.e., autonomous motivation) is still regarded as extrinsic motivation, it has a full range of autonomous regulations and internal locus of causality, whose characteristics are very similar to intrinsic motivation (i.e., inherently autonomous motivation). In this stage, extrinsic motivation shares some qualities with intrinsic or autonomous motivation and is characterized as “being internalization of extrinsically motivated activities” with respect to particular behaviors (Gagne & Deci, 2005, pp.335-336).⁵

Motivation, Organizational Socialization, and Outcomes

In this study, based on the SDT approach, we can anticipate that the organizational socialization process which includes social communications and mentoring would function as

important environmental moderators which facilitate the internalization process of extrinsic motivation. In other words, when public employees and managers work within the well-arranged socialization structures, in which organizations can provide organizational constituents highly autonomous, integrated, and self-determined environments, their extrinsic motivation could be easily transformed and internalized into intrinsic motivation (or, at least into the status of integrated regulation), and hence could have more positive organizational outcomes (i.e., more positively influence job involvement and organizational effectiveness while more negatively influence perceptions of red tape) compared with extrinsically motivated people who work within less developed socialization relationships with relatively few organizational interactions and communications (Vallerand, 1997). Drawing these arguments, this study hypothesizes that, first, when public managers are intrinsically motivated, the interactions with intrinsic motivation and organizational socialization (as moderators) will be significantly associated with organizational outcomes. Second, when employees are extrinsically motivated, it is expected that the interactions with extrinsic motivation and organizational socialization (as moderators) will develop and transform extrinsic motivation into more autonomous motivation (i.e., integrated regulation) or inherently autonomous motivation (i.e., intrinsic motivation) and hence the interaction effects will also be significantly associated with organizational outcomes – job involvement, red tape, and organizational effectiveness.

Hypothesis 7 (Intrinsic motivation with socialization): Public managers' intrinsic motivation interacts with organizational socialization to predict job involvement, red tape, and organizational effectiveness. Organizational socialization will significantly moderate the relationship between public managers' intrinsic motivation and three organizational outcomes.

Hypothesis 8 (Extrinsic motivation with socialization): Public managers' extrinsic motivation interacts with organizational socialization to predict job involvement, red tape, and organizational effectiveness. Organizational socialization will significantly moderate the relationship between public managers' extrinsic motivation and three organizational outcomes.

Data and Measures

Data and Samples

This study utilized the National Administrative Studies Project (NASP) III survey instrument, which aimed to collect data on managers working in public agencies in the state of Illinois (N = 358) and Georgia (N = 432). They were representative of the original random sample of two state employees. The survey instrument was prepared to measure state employee perceptions about various aspects of organizational issues such as work motivation, career histories, hiring practices, and organizational cultures and structures as well as to investigate numerous individual and organizational characteristics – e.g., affiliated agencies, agency mission and goals, gender, ethnicity, educational level, salary, and age. In this study, in terms of dealing with missing data, the mean imputation method was used at level-two.⁶ The total sample sizes of the level-one (individual level) and level-two (agency level) variables were 790 and 61, respectively (see Table 1).⁷

Instrumentation and Measures

Some responses were measured on a four-point Likert scale with specific statements. From relevant survey items, two work motivation scales, a mentoring scale, and job involvement and effectiveness scales were developed (See Appendix). Exploratory factor analysis (EFA) – i.e., a principal axis factoring (PAF) and varimax rotation technique – was used to obtain factor extraction (using eigenvalues greater than 1.0). To assess internal consistency and to ensure reliability of each scale, Cronbach's Alpha reliability test was done. These relative stable alpha values would indicate that the test content is rather homogeneous and answers are consistent.⁸

Measures of Individual (Level-1) Predictors

Eight variables which measured personal and job characteristics of Georgia and Illinois

State managers were included – gender, age, ethnicity, educational level, job tenure, and managerial power (demographic control variables which can reduce confounding effects) – as well as two types of work motivation – intrinsic and extrinsic motivation.⁹ The motivation variables were measured and developed from the eleven (four-point scale) items as shown in Appendix. To operationalize motivation scales, a principal axis factoring (PAF) analysis and the varimax rotation technique to obtain factor extraction were adopted. These methods enable us to extract communalities from different variables and, by doing this, combine different variables into new variables.¹⁰

Measures of Organizational (Level-Two) Socialization Predictors

As level-two predictors, first, three types of social communications were included: 1) intra-social communication (with employees), 2) inter-social communication (with government agencies), and inter-social communication (with private companies). The intra-social communication variable was measured in the item asking what percentage of work-related mail, email, and phone calls the state managers sent to persons within this organization whereas inter-social communication variables were operationalized by using the item asking what percentage of work-related mail, email, and phone calls the state managers sent to each of the following categories of recipients: 1) government agencies or institutions or 2) private companies (See Appendix). The second type of organizational level variable is the mentoring process in state agencies. Eight survey items were operationalized and used to measure a mentoring scale. In the survey, state employees were asked to indicate whether mentorship or mentoring would positively influence them within the organization or whether mentoring has significantly contributed to their success in the organization (Cronbach's alpha = .762).

Interaction Effect (Level- 1 × Level- 2 Predictor Interactions)

In order to confirm the multiplicative and joint effects between the motivation (level-1) and organizational socialization (level-2) variables, using available survey items, eight interaction terms were measured. The relative advantage of adding interaction terms is that we can realistically and elaborately incorporate the additional joint effects of each of the main antecedents on outcome variables.

Outcome Variables: Job Involvement, Job Satisfaction, Organizational Effectiveness

In this study, three outcome variables were developed as organizational consequences in Georgia and Illinois state agencies: job involvement, red tape, and organizational effectiveness. The first variable, “job involvement,” created by factor analysis, includes six items. All converged onto one factor (Cronbach’s alpha = .715). The second outcome variable, “red tape,” was measured by a 10-point scale item. The concept of red tape was measured and operationalized on the basis of individualistic perceptions by asking, “How would you assess the level of red tape in your organization?” The third outcome variable, “organizational effectiveness,” was also measured by a factor analysis collapsing three questions (about the overall quality of work, clients’ satisfaction, and goal clarity) into one factor index (Cronbach’s alpha = .792). In the hierarchical regression model (HLM), the statistical effects among antecedents and outcomes were examined with the expectation that there would be significant relationships among them.

Statistical Modeling: Hierarchical Linear Modeling (HLM)

In state agencies, a hierarchical ordering structure is evident. The basic practical and statistical assumption of the hierarchical linear model (HLM) in this study is that state employees are nested within state agencies, creating a hierarchical data structure with two-levels of random

variation: variation among employees within state agencies (level-1) and variation among state agencies within two states, Georgia and Illinois (level-2). One of the rationales for using the HLM method in this study is that OLS does not take into account the interdependence of individual-level observations nested within higher-level state agencies; hence, estimates of standard errors may be biased, and test statistics may not be valid. To avoid these potential problems caused by hierarchically nested data structures, the ANCOVA and the intercepts and slopes-as-outcomes models will be estimated in this research. HLM explicitly explains the nested nature of data and can simultaneously estimate the impact of factors at different levels on individual-level outcomes while maintaining appropriate levels of analysis for predictors (Raudenbush et al., 2000).

Results and Findings

The Level-1 (Employee-Level) Model: One-Way ANCOVA Model with Random Effects

In an employee (individual) -level model, a one-way ANCOVA model was employed in order to incorporate several covariates and to see how these level-one predictors would affect outcome variables.¹¹ In this ANCOVA model, each slope of the covariate is assumed to have the same effect on each level of the factor (i.e., homogeneity of regression). As fixed effects, eight covariates were included: 1) gender (γ_{10}), 2) age (γ_{20}), 3) ethnicity (γ_{30}), 4) educational level (γ_{40}), 5) job tenure in current positions (γ_{50}), 6) managerial power (γ_{60}), 7) intrinsic motivation (γ_{70}), and 8) extrinsic motivation (γ_{80}). As random effects, level-one and level-two variances were included.¹²

The final level-one ANCOVA model is as follows:

Level-1 Model:

$$Y_{ij} \text{ (Job Involvement, Red Tape, Organizational Effectiveness)} = \beta_{0j} + \beta_{1j} \text{ (Gender)} + \beta_{2j} \text{ (Age)} + \beta_{3j} \text{ (Ethnicity)} + \beta_{4j} \text{ (Educational Level)} + \beta_{5j} \text{ (Job Tenure)} + \beta_{6j} \text{ (Managerial Power)} + \beta_{7j} \text{ (Intrinsic Motivation)} + \beta_{8j} \text{ (Extrinsic Motivation)} + \epsilon_{ij}$$

1) Reliability and the Conditional ICC Coefficient

In the three ANCOVA models, all reliability estimates (β_0) are greater than 0.05. The conditional ICC coefficient indicates that, in the job involvement model, there is approximately 18.3 % of the variation in state managers' job involvement across agencies. In a similar vein, in the models of red tape and organizational effectiveness, the proportions of the variances across state agencies are approximately 20.5% and 16.5%, respectively.

2) Proportion of Variance Explained

By comparing the variance estimates from the unconditional model with the variance estimates from the conditional model, we can determine the proportion of the variance explained by the set of covariates and determine the proportion by which the unconditional variance has been reduced. First, proportions of level-one variance explained by the eight predictors at level-one in three models are 25.13% (job involvement), 23.12% (red tape), and 24.87% (organizational effectiveness). Second, the proportions of level-two variance explained by the eight predictors at level-two in three models are 0% (job involvement), 25% (red tape), and 33.3% (organizational effectiveness).

3) The Fixed and Random Effects

ANCOVA covariates would statistically adjust for the initial advantage. Especially, when the covariates are grand mean centered, ANCOVA can control for the influence of the covariate and the variance term on the intercept is adjusted. As shown in Table 3 to 5, managerial power ($B = .003^{**}$) and intrinsic motivation ($B = .08^{**}$) are statistically significant ($p < 0.05$) in the job involvement model whereas intrinsic motivation ($-.391^{**}$) is significantly and negatively related in the red tape model. In the organizational effectiveness model, age ($B = .009^{**}$), managerial power, ($B = .001^{**}$), and intrinsic motivation ($B = .195^{**}$) are statistically significant. In terms of

random effects, all chi-square values show that level-2 variances are significantly different from zero; that is, the levels of job involvement, red tape, and organizational effectiveness vary across state agencies significantly. **[Confirmed Hypotheses 1 and 2]**

The Level- 2 (Organizational-Level) Model: Intercepts and Slopes as Outcome Model

In an organizational-level model, an intercepts and slopes as outcome model, which assumes that the intercept and slope have random effects, was used.¹³ As organizational socialization predictors (at the level-2), the four fixed effects were included: 1) intra-social communication (with employees) (γ_{01}), 2) inter-social communication (with government agencies) (γ_{02}), 3) inter-social communication (with private companies) (γ_{03}), and 4) mentoring (γ_{04}). As random effects, level-one and level-two variances were included. In addition, in order to examine the cross-level interaction effects between two types of motivation and social network behaviors, eight interaction terms were included.¹⁴ Below is the final intercepts and slopes as outcome model:

Level One Model:

Y_{ij} (Job Involvement, Red Tape, Organizational Effectiveness) = β_{0j} + β_{1j} (Gender) + β_{2j} (Age) + β_{3j} (Ethnicity) + β_{4j} (Educational Level) + β_{5j} (Job Tenure) + β_{6j} (Managerial Power) + β_{7j} (Intrinsic Motivation) + β_{8j} (Extrinsic Motivation) + ϵ_{ij}

Level Two Model:

Intercept: $\beta_0 = \gamma_{00} + \gamma_{01}$ (Intra-Social Communication) + γ_{02} (Inter-Social Communication 1) + γ_{03} (Inter-Social Communication 2) + γ_{04} (Mentoring) + u_{0j}

Slope 1: β_{7j} (Intrinsic Motivation) = $\gamma_{70} + \gamma_{71}$ (Intra-Social Communication) + γ_{72} (Inter-Social Communication 1) + γ_{73} (Inter-Social Communication 2) + γ_{74} (Mentoring) + u_{0j}

Slope 2: β_{8j} (Extrinsic Motivation) = $\gamma_{80} + \gamma_{81}$ (Intra-Social Communication) + γ_{82} (Inter-Social Communication 1) + γ_{83} (Inter-Social Communication 2) + γ_{84} (Mentoring Process) + u_{0j}

$\beta_{1j} = \gamma_{10}$; $\beta_{2j} = \gamma_{20}$; $\beta_{3j} = \gamma_{30}$; $\beta_{4j} = \gamma_{40}$; $\beta_{5j} = \gamma_{50}$; $\beta_{6j} = \gamma_{60}$

1) Reliability and the Conditional ICC Coefficient

In the three intercepts and slopes as outcome models, all reliability estimates are greater than 0.05. The conditional ICC coefficient indicates that, in the job involvement model, there are approximately 16.8% of the variations in state managers' job involvement across agencies. In a similar vein, in the models of red tape and organizational effectiveness the proportions of the variances across state agencies are approximately 21.4% and 22.4%, respectively.

2) Proportion of Variance Explained

First, proportions of level-one variance explained by the eight level-one predictors and the level-two predictors (including interaction effects) in the three models are 32.57% (job involvement), 33.62% (red tape), and 28.26% (organizational effectiveness). Second, the proportions of level-two variance explained by the eight predictors and the level-two predictors (including interaction effects) in the three models are 33.33% (job involvement), 100% (red tape), and 100% (organizational effectiveness). Overall, the proportions of level-one and level-two variances explained by the intercepts and slopes as outcome model are greater than those explained by the ANCOVA model. This may have occurred because level-two covariates were included in the intercepts and slopes as outcome model.

3) The Fixed and Random Effects

In terms of the level-two fixed effects, we can observe that level-two predictors explain well the variation in the grand mean of outcome variables, β_{0j} . These level-two slope coefficients are the expected change in the outcomes for a one-unit increase in the level-two covariates. First, the HLM outputs indicate that a mentoring effect is significantly associated with state managers' job involvement, red tape, and organizational effectiveness. That is, mentoring positively and significantly increases the mean levels of job involvement and

organizational effectiveness (i.e., grand mean of the outcome variables) by .347 and .694, respectively, whereas mentoring can significantly reduce the level of organizational red tape by .261. Second, the HLM results indicate that some of the social communication behaviors among state managers significantly affect three different outcomes; for example, intra-social communication is positively and significantly related to job involvement and organizational effectiveness whereas inter-social communication (with private companies) has a negative and significant relationship with the level of red tape in state agencies. These empirical findings suggest that specific types of organizational socialization may be much more effective than others to obtain better organizational outcomes. **[Partially Confirmed Hypotheses 3, 4, 5, and 6]**

Third, regarding the cross-level interaction effects, where the association between level-one motivation variables and the outcome variables depends on the level of level-two socialization predictors, the results indicate that when state managers are more involved with the different types of organizational socialization behaviors, the relationship between extrinsic motivation and three outcome variables becomes more pronounced. For example, although public managers' extrinsic motivation in itself does not significantly affect job involvement, when extrinsic motivation interacts with four types of socialization variables, the effects of extrinsic motivation on job involvement are expected to be pronounced and to be significant. The results are fairly consistent with the self-determination theory (SDT) which was described in the previous section. On the other hand, although intrinsic motivation in itself is significantly related to the three outcome variables, none of the interaction terms between intrinsic motivation and socialization variables was significant, which means there is no positive interaction effect between cross-level variables on outcome variables. The result reveals that intrinsic motivation

which is “inherently autonomous” is not moderated or internalized by any other organizational actors anymore.

To sum, we can argue that in state agencies certain types of organization socialization may serve to change and transform state managers’ extrinsically oriented motivation into more intrinsically oriented motivation (or, at least into autonomous motivation) and subsequently, the modified motivation characteristics (i.e., cross interaction effects) would be more positively associated with job involvement and organizational effectiveness, and would significantly reduce the degree of red tape in state agencies as intrinsic motivation does. Finally, from the random effects of the agency-level models, we can confirm that all three outcome variables significantly vary across Georgia and Illinois state agencies, according to the chi-square test (level-two variances are significantly different from zero; $p < .01$). **[Partially Confirmed Hypotheses 7 and 8]**

Conclusions and Implications

This study addressed two important topics that have particular relevance for behavioral and organizational outcomes in the public sector: 1) work motivation – i.e., intrinsic motivation (as a motivator) and extrinsic motivation (as a hygiene factor) – and 2) organizational socialization – i.e., social communications and mentoring. Specifically, the self-determination theory (SDT) assertion of an underlying control-to-autonomy continuum suggests that the types of extrinsic motivation vary in their degree of self-determination (from controlled motivation to autonomous motivation) and intrinsic motivation is invariantly and inherently self-determined (Gagne & Deci, 2005). The organizational socialization model and the social capital theory also supports the argument that the effects of social networks and the socialization process on organizational outcomes depend on the access to information, communication, congruence of

values, resources, and sponsorship opportunities resulting from social contacts (e.g., see Blau & Alba, 1982; Feldman, 1981). Mentoring theory also suggests that “mentoring network,” which is based on developmental contacts and on formal or informal relationships, plays an important role in obtaining positive organizational outcomes (e.g., promotion, job satisfaction, and job involvement) (Dreher & Ash, 1990). Based on these theoretical frameworks, utilizing hierarchical linear modeling (HLM), this study probed the independent and cross-level effects of motivation (nested at the individual level) and socialization (nested at the organizational level) on job involvement, red tape, and organizational effectiveness.

First, the results of this study support Herzberg’s two-factor theory that two types of motivation as a motivator (intrinsic motivation) and a hygiene factor or satisfier (extrinsic motivation) are differently associated with job attitudes with the motivator being considered higher order. In all three models, as an individual-level predictor, intrinsic motivation significantly increases the level of public managers’ job involvement and the level of organizational effectiveness. Also, we can find that public managers with the high level of intrinsic motivation perceive less red tape than extrinsically motivated public managers do in state agencies. From the HR perspective, the results suggest that maintaining the high level of public managers’ intrinsic motivation is effective in creating an organizational environment which generates and facilitates positive job attitudes, and hence, increases organizational effectiveness in public organizations.

Second, the results of HLM indicate that some types of organizational socialization are closely related to the outcomes; for example, an intra-social communication is shown to have a significant relationship with job involvement and organizational effectiveness whereas an inter-social communication (with private sectors) decreases the perceptions of red tape significantly.

Also, it is clear that the presence of an effective mentoring system may lead to positive outcomes in state agencies.

The results of cross-level interaction effects support the SDT prediction that, within more autonomous or self-determined social contexts, extrinsic motivation can be easily internalized and transformed into the most advanced form of extrinsic motivation (called integrated extrinsic motivation) or into intrinsic motivation (called inherently autonomous motivation). That is, socialization actors provide autonomous and discretionary environments with extrinsically motivated public managers. Moreover, the transformed autonomous motivation which was operationalized from the interaction effects between extrinsic motivation and socialization variables has a significant relationship with job involvement, red tape, and organizational effectiveness.

Finally, from the ANCOVA and intercepts and slopes as outcomes models, we can confirm that the three outcome variables significantly vary across Georgia and Illinois state agencies. The findings would lead organizational researchers to conclude that we need to investigate state agencies more carefully and systematically while we should also be involved with (agency- or organization-based) in-depth case studies (e.g., using the qualitative research method) by examining the organizational characteristics embedded in each state agency (e.g., goals, missions, culture, systems, and political orientation).

In this research, despite the significant findings, some theoretical weaknesses as well as methodological and data limitations suggest that the empirical results of this study should be carefully interpreted. Specifically, in terms of the methodological problems, a single-source (mono-method) bias should be noted; rather than objectively measured or quantified variables, the “self-reported” and “perceived” measures were used. In this regard, more objective data on

organizational outcomes should be required.¹⁵ Overall, this study attempted to make several theoretical and methodological contributions and advances in the field of public human resource management. Moreover, the findings of this study also have important implications for further research on motivation, social networks, organizational socialization, and other job attitudes at the state and the federal level. First, this study offered parsimonious theoretical frameworks – e.g., motivator-hygiene factor theory, self-determination theory (SDT), and socialization and social capital theory – to help understand the logics of interactions between motivation, social communications, and mentoring on organizational consequences. Thus, it is important that further research replicate findings reported here, while addressing the theoretical and methodological limitations.

Second, other types of mediators and contextual factors (moderators) that may influence public employees' attitudinal and behavioral outcomes as well as organizational performance are necessary for more advanced empirical research. For example, in addition to individual factors, organizational factors, such as the nature of the task, human resource policies and procedures, organizational culture, and public personnel management practices, could be included. Moreover, several relational factors – e.g., the degree of leadership, commitment, and procedural justice in public organizations – may be important variables that may also significantly influence several organizational outcomes. Finally, from a comparative perspective, we need to analyze different models of motivation and social networks in a variety of cultural, economic, and political contexts within the United States – at the local, state, and federal levels. This comparative research approach will enrich our relevant disciplines by providing salient commonalities and anomalies in practice and will ultimately broaden our knowledge on the antecedents, interactions, and consequences in the field of public human resource management.

Appendix

Construction of Indices

A. Level-1 Predictors: Work Motivation

Intrinsic Motivation Scale (*five items*)

(*Standardized Coefficient Alpha: .711*)

The factors that motivated managers to accept a job at their current organization:

- a. The organization's reputation for opportunities for women and minorities
- b. Overall quality and reputation of this organization
- c. Desire for less bureaucratic red tape
- d. Desire for increased responsibility
- e. Ability to serve the public and the public interest

Extrinsic Motivation Scale (*six items*)

(*Standardized Coefficient Alpha: .717*)

The factors that motivated managers to accept a job at their current organization:

- a. Opportunity for advancement within the organization's hierarchy
- b. Job security
- c. The organization's pension or retirement plan
- d. Benefits (medical, insurance)
- e. "Family friendly" policies (e.g., flexible work hours, parental leave)
- f. Salary

B. Level-2 Predictors: Organizational Socialization

Social Communications Scale

During the last five working days, what percentage of work-related mail, email, and phone calls you sent to each of the following categories of recipients (% of correspondence)?

- 1) Intra-Social Communication with employees with this organization
- 2) Inter-Social Communication with government agencies or institutions
- 3) Inter-Social Communication with private companies

Mentoring Scale (*eight items*)

(*Standardized Coefficient Alpha: .762*)

- a. My mentor and I share similar professional values
- b. My mentor helped introduce me to influential people in this organization
- c. My mentor helped introduce me to influential people outside this organization
- d. My mentor and I are friends
- e. My mentor has helped me deal with "office politics"
- f. My mentor has a great deal of respect for my ideas
- g. Overall, my mentor has contributed a great deal to my success in this organization
- h. I have a great deal of respect for my mentor's ideas

C. Outcome Variables

Job Involvement Scale *(six items)*

(Standardized Coefficient Alpha: .715)

- a. I put forth my best effort to get the job done regardless of the difficulties
- b. Time seems to drag while I am on the job (reversed)
- c. It has been hard for me to get very involved in my current job (reversed)
- d. I do extra work for my job that isn't really expected of me
- e. The most important things that happen to me involve my work
- f. I do not have enough authority to determine how to get my job done (reversed)

Red Tape Scale *(10- point scale)*

How would you assess the level of red tape in your organization?

Organizational Effectiveness Scale *(three items)*

(Standardized Coefficient Alpha: .792)

- a. I would rate the overall quality of work being done in my organization as very good (Quality of Work)
- b. Our clients seem quite satisfied with the performance of this organization (Customers' Satisfaction)
- c. Most employees here are clear about the tasks they are expected to perform (Goal Clarity)

**Figure 1: A Self-Determination Theory (SDT) Framework:
Intrinsic and Extrinsic Motivation Continuum
(Adopted from Ryan & Deci, 2000a, p. 61)**

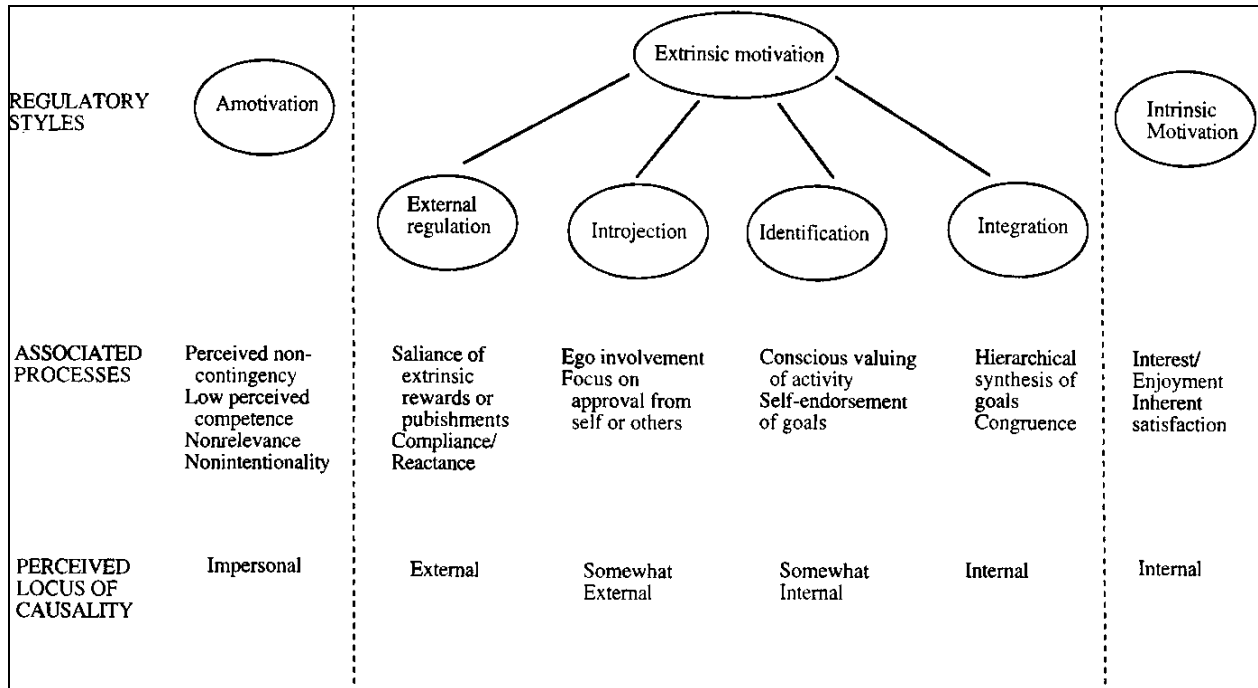


Table 1: Descriptive Statistics among Study Variables

Variables	Valid N	Mean	Std. Deviation	Minimum	Maximum
Level-One Variables					
Gender (Female: 0 Male: 1)	637	.58	.49	.00	1.00
Age	637	49.02	8.54	25.00	72.00
Ethnicity (Minority: 0 Majority: 1)	637	.80	.40	.00	1.00
Educational Level	637	4.78	1.18	1.00	6.00
Job Tenure	637	1998.77	6.27	1967.00	2005.00
Managerial Power	637	23.20	76.70	.00	1200.00
Intrinsic Motivation	637	2.71	.62	.80	4.00
Extrinsic Motivation	637	3.20	.57	1.00	4.00
Level-Two Variables					
Intra-Social Communication (with Employees)	61	66.87	15.47	25.00	100.00
Inter-Social Communication (with Government Agencies)	61	9.13	4.40	.00	20.00
Inter-Social Communication (with Private Companies)	61	5.92	6.00	.00	40.00
Mentoring	61	3.33	.18	2.63	3.75
Outcome Variables					
Job Involvement	637	2.96	.32	1.57	3.71
Red Tape	637	7.11	2.11	.00	10.00
Organizational Effectiveness	637	3.04	.66	1.00	4.00

Listwise Deletion and Mean Imputation methods were used to deal with missing data at level-1 and level-2.

Table 2: Zero-Order Correlations among Antecedents, Moderators, and Consequences in the HLM Model

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gender															
2. Age	.156**														
3. Ethnicity	.074**	.019													
4. Educational Level	.083**	.086**	-.054												
5. Job Tenure	.150**	.357**	-.066*	-.060*											
6. Managerial Power	.073*	.069*	.023	-.022	.016										
7. Intrinsic Motivation	.154**	-.023	.131**	.082**	.050	-.009	(.711)								
8. Extrinsic Motivation	.118**	.186**	.097**	.240**	.064*	-.068*	.399**	(.727)							
9. Intra-Social Communication (with Employees)	-.048	.089**	-.031	-.054	.120**	.067*	.101**	.139**							
10. Inter-Social Communication (with Government Agencies)	.023	-.010	-.009	.010	.009	.001	.078**	.008	.323**						
11. Inter-Social Communication (with Private Companies)	.109**	.051	.052	-.041	.105**	-.019	-.015	-.056	.403**	.005					
12. Mentoring	-.029	-.011	.049	.023	.034	-.016	.186**	.003	-.065	-.063	.005	(.762)			
13. Job Involvement	-.007	.124**	.018	.056	-.051	.042	.130**	-.083**	.145**	.021	.031	.205**	(.702)		
14. Red Tape	-.009	.116**	-.047	-.043	.100**	-.006	.131**	.199**	.279**	.083**	-.068*	-.067	.359**		
15. Organizational Effectiveness	.021	.127**	.000	.019	.099**	.046	.201**	-.052	.164**	-.047	.021	.146**	.477**	.501**	(.717)

** . Correlation is significant at the 0.01 level (two-tailed).
 * . Correlation is significant at the 0.05-level (two-tailed).
 The numbers in parentheses are Cronbach's Alpha values.

Table 3: Hierarchical Linear Model (HLM) Results for Job Involvement ^a

1. Job Involvement Model	1. An Employee-level Model: One-way ANCOVA Model	2. An Agency-level Model: Intercepts and Slopes as Outcomes Model
Reliability Intercept (β_0)	.211	.183
Fixed Effects		
Intercept (γ_{00})	2.96**	1.41**
Level-1 Slope (Individual) Model		
1. Demographic Controls, Individual Level		
Gender (γ_{10})	-.002 (-.094)	
Age (γ_{20})	.003 (1.448)	
Ethnicity (γ_{30})	.008 (.279)	
Educational Level (γ_{40})	.0015 (.172)	
Job Tenure (γ_{50})	.0012 (.688)	
Managerial Power (γ_{60})	.003** (2.636)	
2. Work Motivation		
Manager's Intrinsic Motivation (γ_{70})	.08** (3.18)	
Manager's Extrinsic Motivation (γ_{80})	-0.02 (-0.681)	
Level-2 Intercept (Organizational) Model: Organizational Socialization		
1. Social Communications		
Intra-Social Communication (with Employees) (γ_{01})		.032** (3.020)
Inter-Social Communication (with Government Agencies) (γ_{02})		.001 (.165)
Inter-Social Communication (with Private Companies) (γ_{03})		.005 (1.209)
2. Mentoring Effects		
Mentoring (γ_{04})		.347** (3.036)
Moderators (Level 1 \times Level 2 Interaction Terms) Model		
Intrinsic Motivation \times Intra-Social Communication (with Employees) (γ_{71})		.001 (.149)
Intrinsic Motivation \times Inter-Social Communication (with Government Agencies) (γ_{72})		.004 (.427)
Intrinsic Motivation \times Inter-Social Communication (with Private Companies) (γ_{73})		-.002 (-.307)
Intrinsic Motivation \times Mentoring (γ_{74})		.021 (.084)
Extrinsic Motivation \times Intra-Social Communication (with Employees) (γ_{81})		.212** (2.850)
Extrinsic Motivation \times Inter-Social Communication (with Government Agencies) (γ_{82})		.190** (2.564)
Extrinsic Motivation \times Inter-Social Communication (with Private Companies) (γ_{83})		.208** (2.796)
Extrinsic Motivation \times Mentoring (γ_{84})		.406** (2.439)
Random Effects		
Level-1 effect (r_{ij}) variance	.097	.095
Level-2 effects (μ_{0j}) variance	.003**	.003**
Inter-class correlation (ICC)		
Conditional ICC	18.3%	16.8%
Proportion of the variance in r_{ij} explained by the model (%)	25.13%	32.53%
Proportion of the variance in μ_{0j} explained by the model (%)	0%	33.3%
Deviance		
	404.25	397.28
Number of parameters	2	2

^a Individual-level N= 637; organizational level N = 61

** $P < .05$: significant at 0.05-level

* $P < .10$: significant at .10-level

•Critical values are 1.96 for $P < .05$ and 1.65 for $P < .10$ (t-statistics are in parentheses).

Table 4: Hierarchical Linear Model (HLM) Results for Red Tape ^a

2. Red Tape Model	1. An Employee-level Model: One-way ANCOVA Model	2. An Agency-level Model: Intercepts and Slopes as Outcomes Model
Reliability Intercept (β_0)	.492	.471
Fixed Effects		
Intercept (γ_{00})	6.61**	16.07**
Level-1 Slope (Individual) Model		
1. Demographic Controls, Individual Level		
Gender (γ_{10})	.139 (.815)	
Age(γ_{20})	-.014 (-1.503)	
Ethnicity (γ_{30})	.156 (.788)	
Education Level (γ_{40})	.006 (.947)	
Job Tenure (γ_{50})	.012 (.828)	
Managerial Power (γ_{60})	-.001 (-1.368)	
2. Work Motivation		
Manager's Intrinsic Motivation (γ_{70})	-.391** (-2.458)	
Manager's Extrinsic Motivation (γ_{80})	.193 (1.066)	
Level-2 Intercept (Organizational) Model: Organizational Socialization		
1. Social Communications		
Intra-Social Communication (with Employees) (γ_{01})		.015 (.926)
Inter-Social Communication (with Government Agencies) (γ_{02})		.041 (.881)
Inter-Social Communication (with Private Companies) (γ_{03})		-1.532** (-2.317)
2. Mentoring Effects		
Mentoring (γ_{04})		-2.61** (-2.198)
Moderators (Level 1 \times Level 2 Interaction Terms) Model		
Intrinsic Motivation \times Intra-Social Communication (with Employees) (γ_{71})		-.006 (-.30)
Intrinsic Motivation \times Inter-Social Communication (with Government Agencies) (γ_{72})		-.070 (-1.199)
Intrinsic Motivation \times Inter-Social Communication (with Private Companies) (γ_{73})		-.006 (-.134)
Intrinsic Motivation \times Mentoring (γ_{74})		-1.41 (.847)
Extrinsic Motivation \times Intra-Social Communication (with Employees) (γ_{81})		-.35** (-2.093)
Extrinsic Motivation \times Inter-Social Communication (with Government Agencies) (γ_{82})		-.015 (-.170)
Extrinsic Motivation \times Inter-Social Communication (with Private Companies) (γ_{83})		-.24** (-2.326)
Extrinsic Motivation \times Mentoring (γ_{84})		-.330 (-.183)
Random Effects		
Level-1 effect (r_{ij}) variance	3.809	3.837
Level-2 effects (μ_{0j}) variance	.724**	.654**
Inter-class correlation (ICC)		
Conditional ICC	20.5%	21.4%
Proportion of the variance in r_{ij} explained by the model (%)	23.12%	33.62%
Proportion of the variance in μ_{0j} explained by the model (%)	25%	100%
Deviance		
Number of parameters	404.25	403.54
	2	2

^a Individual-level N= 637; organizational level N = 61

** $P < .05$: significant at 0.05-level

* $P < .10$: significant at .10-level

•Critical values are 1.96 for $P < .05$ and 1.65 for $P < .10$ (t-statistics are in parentheses)

Table 5: Hierarchical Linear Model (HLM) Results for Organizational Effectiveness ^a

3. Effectiveness Model	1. An Employee-level Model: One-way ANCOVA Model	2. An Agency-level Model: Intercepts and Slopes as Outcomes Model
Reliability Intercept (β_0)	.432	.394
Fixed Effects		
Intercept (γ_{00})	3.15**	1.34
Level-1 Slope (Individual) Model		
1. Demographic Controls, Individual Level		
Gender (γ_{10})	-.009 (-.220)	
Age (γ_{20})	.009** (3.199)	
Ethnicity (γ_{30})	-.02 (-.505)	
Educational Level (γ_{40})	-.006 (-.238)	
Job Tenure (γ_{50})	-.001 (-.151)	
Managerial Power (γ_{60})	.001** (4.613)	
2. Work Motivation		
Manager's Intrinsic Motivation (γ_{70})	.195** (5.219)	
Manager's Extrinsic Motivation (γ_{80})	.023 (.404)	
Level-2 Intercept (Organizational) Model: Organizational Socialization		
1. Social Communications		
Intra-Social Communication (with Employees) (γ_{01})		.070** (2.023)
Inter-Social Communication (with Government Agencies) (γ_{02})		.001 (0.115)
Inter-Social Communication (with Private Companies) (γ_{03})		.000 (.038)
2. Mentoring Process		
Mentoring (γ_{04})		.694** (2.67)
Moderators (Level 1 \times Level 2 Interaction Terms) Model		
Intrinsic Motivation \times Intra-Social Communication (with Employees) (γ_{71})		-.004 (-0.858)
Intrinsic Motivation \times Inter-Social Communication (with Government Agencies) (γ_{72})		.000 (.066)
Intrinsic Motivation \times Inter-Social Communication (with Private Companies) (γ_{73})		-.006 (-.063)
Intrinsic Motivation \times Mentoring (γ_{74})		-.106 (-.256)
Extrinsic Motivation \times Intra-Social Communication (with Employees) (γ_{81})		.134 (1.468)
Extrinsic Motivation \times Inter-Social Communication (with Government Agencies) (γ_{82})		.188** (2.414)
Extrinsic Motivation \times Inter-Social Communication (with Private Companies) (γ_{83})		.250** (2.326)
Extrinsic Motivation \times Mentoring (γ_{84})		.895 (1.635)
Random Effects		
Level-1 effect (r_{ij}) variance	.367	.366
Level-2 effects (μ_{0j}) variance	.05**	.042**
Inter-class correlation (ICC)		
Conditional ICC	16.5%	22.4%
Proportion of the variance in r_{ij} explained by the model (%)	24.87%	28.26%
Proportion of the variance in μ_{0j} explained by the model (%)	33.3%	100%
Deviance		
Number of parameters	404.25	398.48
	2	2

^a Individual-level N= 637; organizational level N = 61

** $P < .05$: significant at 0.05-level

* $P < .10$: significant at .10-level

•Critical values are 1.96 for $P < .05$ and 1.65 for $P < .10$ (t-statistics are in parentheses)

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Notes

¹ The recent PSM studies also include such research topics as 1) an investigation of the relationship between PSM and an organization's mission in the public sector (see Wright, 2007); 2) an empirical analysis of the difference in work motivation between the public and private sectors (see Buelens & Broeck, 2007; Houston, 2005); 3) meta-analyses and reviews of previous research on the motivational programs and performance (see Perry, Mesch, & Paarlberg, 2006); 4) research into the causal relationship between red tape and PSM (see Scott & Pandey, 2005); and 5) an empirical study of the role of organizations in fostering PSM (see Moynihan & Pandey, 2007).

² However, Alonso and Lewis (2001) found that federal employees were extrinsically motivated when pay and promotion decisions were based on performance (as measured by grades and ratings). Their findings indicate that incentive or other rewarding systems could be effective or productive even in a high-PSM environment (p. 377).

³ One of the assumptions of motivation-hygiene theory is that these two motivational forms are independent and additive. We can test this theoretical assumption by including interaction terms in the empirical model.

⁴ CET emphasizes that people are intrinsically motivated only when employees can perceive "activities (that have the appeal of novelty, challenge, or aesthetic value) as intrinsic interest for themselves" (Ryan & Deci, 2000, p. 71).

⁵ From the previous empirical findings, intrinsic motivation and integrated extrinsic motivation were identified as the two distinct types of autonomous motivation (Ryan & Deci, 2000).

⁶ In level-1 data, missing values can be also managed by the listwise deletion method. In listwise deletion, cases with a missing score on any variable were excluded from all analyses and the effective sample size with listwise deletion included only cases with complete records. An advantage of this method was that all analyses were conducted with the same number of cases (Kline, 2005). However, missing values are not permissible at level-two.

⁷ A simple random sample of 2,000 public managers was selected from original population (1,000 from Illinois and 1,000 from Georgia). An overall response rate of 42.47% was achieved (790 usable completed surveys out of 1,853 in the original sample). Extensive documentation about the NASP-III (e.g., sampling procedures and survey instruments) is available at the project website, <http://www.uga.edu/padp/nasp.htm>

⁸ Internal consistency is important in this research because the homogeneity of four reform scales is critical for measuring the respondents' attitudes about the scale accurately. Moreover, when the content is consistent, it is also easier to interpret. To assess internal consistency and to ensure reliability of each scale, Cronbach's Alpha reliability test was done. However, high internal consistency is not necessarily an indication of uni-dimensionality. That is, relatively high internal consistency can still be obtained even if a measure is multi-dimensional.

⁹ Among these variables, gender (female = 0) and ethnicity (minority = 0), were dichotomized.

¹⁰ In measuring these constructs of motivation as well as other ordinal scale variables, eleven non-continuous ordinal variables (e.g., four-point Likert scale) were used, which might cause potential problems of nonlinearity and nonnormality. Both nonnormality and nonlinearity will generally result in underestimation of the relationship among variables. In other words, variable communalities, percentage of variance accounted for, and factor loadings will be lower than continuous and normally distributed data. As one solution to this problem, a polychoric-based solution was used in this model and polychoric correlation (PC) matrix, ranging from -1.0 to 1.0, was developed for the measurement.

¹¹ Each predictor (covariate) was sequentially added and only a variable was retained when it shows that it has reliability greater than .05 and has a statistically significant random effect. Based on the results, eight predictors were retained in an employee-level.

¹² In this model, both of the *un-centering* (for dummy variables) and *grand-mean centering* methods were used because there is no random effect in the slope (that is, β_{1j} is fixed across agencies). In other words, the level-one covariates (X variables) was included to control for their effects on the outcomes, rather than to model between

group variance on the slope of these variables. The intercept here is interpreted as the expected value of four outcome variables for each employee with an average score on each of level-1 predictors. In this regard, grand-mean centering adjusts the variation in the intercept between agencies to control for differences in the level-one predictors across agencies.

¹³ In this model, a grand-mean centering option was used and variables were added by one at a time for model building while examining their coefficient for significance (of random effect) and reliability.

¹⁴ In the cross-level interaction model, an interaction is when the association between level-one predictors and the outcome variables depend on the level of level-two predictors. The cross-level interaction will be between the level-one random effect and the level-two predictors in the slope outcome model.

¹⁵ That is, if the antecedent and outcome variables were measured by the same raters or respondents, this could produce confounding results because the assessed overlap between variables may be artifactual (that is, due to common method variance) and may not reflect the true relationship between the underlying constructs (Podsakoff & Organ, 1986). However, a meta-analytic study by Crampton and Wagner (1994) of 42,934 correlations published in 581 studies indicated that the common method variance problem has been exaggerated especially in micro research on organizations.