

## **Bureaucracy and Public Employee Behavior: A Case of Local Government**

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## **Biographical Statements**

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### **ABSTRACT**

Government reinvention advocates assert that less bureaucratic work environments will spark higher creativity, more risk-taking, and greater productivity in public employees. While government reinvention remains a topic of interest to scholars and practitioners alike, these particular arguments lack empirical support. In response, this article tests the relationship between different forms of bureaucratic control (formalization, red tape, and centralization) and reported employee perceptions and behavior in local governments. Analyzing mail survey data from a study of the employees of four cities in a midwestern state, this article finds that employee responses to bureaucratic control are not as straightforward as reinventionists expect. Different types of bureaucratic control are related to distinct employee responses and sometimes these responses are the very behaviors that reinventionists seek to trigger by reducing bureaucracy.

## **Bureaucracy and Public Employee Behavior: A Case of Local Government**

Government reinvention efforts seek to reduce bureaucracy as one tactic for jumpstarting government performance (Frederickson, 1996). Reduced bureaucracy includes internal deregulation, in which organizational rules are trimmed or eliminated, and decentralization, in which decision-making authority is pushed downwards in the organization. These structural changes target the public employee, who is expected to respond with greater on-the-job creativity (Cohen & Brand, 1993; National Performance Review (NPR), 1993), risk-taking (Cohen & Eimicke, 1998; Osborne & Plastrik, 2000), and productivity (Osborne & Gaebler, 1992; NPR, 1993). These behavioral changes in public employees are, in turn, expected to increase public organization effectiveness (Osborne & Plastrik, 1997; NPR, 1993).

The arguments that reduced bureaucracy will alter public employee behavior are challengeable on several grounds. Similar to many reinvention arguments, the connection between bureaucracy and public employee behavior lacks coherent theoretical grounding (Ingraham & Jones, 1999; Thompson & Jones, 1995; Goodsell, 1993) and often rely on anecdote rather than empirical evidence in supporting their claims (Frederickson, 1996). Furthermore, the reinvention literature treats bureaucratic control as a monolithic form, thus neglecting the possibility that distinct forms of control may induce different employee behaviors.

In response to these limitations, this article explores the linkages between bureaucracy and public employee behavior and perceptions. Specifically, we articulate hypotheses about the relationships between perceived bureaucracy and employee behavior, test these hypothetical relationships using empirical data gathered from local

government employees located at different hierarchical levels, and consider these results in light of different forms of bureaucratic control. Undertaking these tasks is timely given that government reinvention shows no sign of waning as a public administration topic (Thompson & Riccucci, 1998; Kettl, 2000; Cohen & Brand, 1993) and has moved from large federal reform efforts to reforms at local levels. Furthermore, public organization structure is of persistent importance to scholars and practitioners alike given its implications for resource distribution, coordination capacity, and efficiency and effectiveness (Andrews et al. forthcoming).

The data for testing these expectations were collected by a mail survey of the population of employees in four midwestern cities. These data offer the opportunity to test the relationships between bureaucratic control and employee behavior and perceptions and includes the views of lower and mid-level city employees, not just managers and leaders. The article is organized as follows. The first section identifies the hypotheses about the relationships between bureaucratic control and public employee behavior. The second section describes the study design. The third section provides an overview of the measures of bureaucratic control and public employee perceptions and the statistical models. Section four reports the results of statistical hypothesis testing. The fifth section interprets the results and the final section provides concluding remarks.

## **REINVENTION RHETORIC, THEORY AND HYPOTHESES**

Government reinvention efforts assume that less bureaucratized work environments yield higher creativity, productivity and risk-taking among public employees. This section documents these expectations, articulates them as testable hypotheses, and compares these hypotheses with theory and evidence from the scholarly

literature. We formulate the hypotheses with three components of bureaucratic control: formalization, red tape, and centralization. Formalization measures the extent of written rules, regulations and procedures (Pugh et al., 1968). Red tape is a measure for ineffective rules (Bozeman, 2000). Centralization indicates the upward locus of decision-making (Aiken & Hage, 1966; Rainey, 1993).

### **Creativity**

Government reinventors anticipate that bureaucracy reduces the ability of public employees to work creatively. Creativity is not explicitly defined, but tends to be used in the context of novel approaches to work tasks and problem solving. For example, creativity is associated with new ideas and innovation (National Commission on the State and Local Public Service (NCSLPS) 1993, p. 21) and with employee judgment and problem solving (NPR, 1993, p. 71). Bureaucracy is expected to dampen creativity by reducing room for discretionary action (Barzelay, 1993, p. viii) and suppressing the consideration of novel ideas (NPR, 1993, p. 77; NCSLPS 1993, p. 21). Conversely internal deregulation and decentralization are expected to enable creativity by freeing employees from having to “blindly follow standard operating procedures” (Cohen & Brand 1993, p. 72), seeking approval from “unnecessary management layers” (NPR, 1993, p. 70), and giving employees ownership in work processes (Osborne & Rivera 1998, p. 73-74; Denhardt 1993, p. 136). If these reinvention arguments are valid, then we should expect:

H<sub>1</sub>: Increases in perceived workplace bureaucratization will be related to lower creativity in the workplace.

H<sub>1a</sub>: Perceived *formalization* will be negatively associated with public employees’ perceptions of creativity in the workplace.

H<sub>1b</sub>: Perceived *red tape* will be negatively associated with public employees' perceptions of creativity in the workplace.

H<sub>1c</sub>: Perceived *centralization* will be negatively associated with public employees' perceptions of creativity in the workplace.

In the scholarly literature, much of the discourse on organizational structure and employee creativity has occurred at the conceptual level (Andriopoulos 2001, p. 839). Thompson (1965) offered a number of explanations for how centralization suppresses creativity: by rendering conflict illegitimate; by giving superiors veto power over potentially threatening innovative ideas; by inducing conformity among employees whose success depends on superiors' approval. Cummings (1965) outlined the theoretical attributes of a creative organizational climate. These attributes include minimal formalization, to enable more rapid responses to changing environments and to eschew the notion of "one best way" of doing things; and greater discretion, participation and autonomy, which are expected to nourish diversity of opinion and the identification of alternative solutions. Koprowski (1972) theorized that creative individuals have little use for authoritative structures and can be retained only by organizations that impose little structure. And several scholars have asserted that bureaucratic control dampens the intrinsic motivation needed for creativity (Amabile, 1988; Deci & Ryan, 1985).

In one contradictory strand of reasoning, Adler and Borys (1996) argue that "enabling" formalization, which involves explaining the goals of procedural requirements to employees, will allow them to interact "creatively" with the organization and environment. This creative interaction is likened to employees who are able to fix equipment malfunctions because they understand the technology's inner workings (1996, p. 61). In most theoretical treatments, however, minimum structure is characterized as a

condition for employee creativity (Koprowski, 1972; Woodman, 1993, p. 309; McGrath, 2001).

Empirical evidence provides mixed support for the government reinvention arguments that bureaucracy inhibits creativity. Cummings, revisiting his argument with colleagues, hypothesized the existence of an optimal level of bureaucratic control that would reduce role conflict and ambiguity and thus facilitate creativity (1975). Through experiments with all-male university students, the researchers found that procedural control and monitoring reduced creativity under some circumstances, but increased creativity under others. By contrast, nearly two-thirds of 120 research and development scientists interviewed for one study identified organizational characteristics such as red tape to be inhibitors of creativity (Amabile, 1988). Creativity among private-sector service employees is fostered by centralization and not affected by formalization (Kelley, Longfellow & Malehorn, 1996). This unexpected finding led the scholars to suggest, similarly to Cummings, that centralized decision-making may increase the clarity of role expectations and thus foster creative deviation. Eckval and Ryhammer (1999) also uncovered surprising results in the positive relationship between centralization, formalization and the creative climate of university departments in a Swiss university. The scholars interpreted these results as evidence that professorial creativity was a subversive response to the bureaucratic system (1999).

### **Productivity**

The government reform literature also asserts that bureaucratic structure lowers public employee productivity by replacing authentic work with bureaucratic compliance. Sometimes bureaucracy's posited affect on employee productivity is direct: complying



with rules and securing approvals, thus consuming time that could be devoted to performing actual tasks (Osbourne & Gaebler, 1992; NPR, 1993; NCSLPS 1993; Osborne & Plastrik, 2000). Other times the effect is indirect, with rules and centralization frustrating employees, yielding discouragement and indifference (DiIulio, Garvey & Kettl, 1993) and less energy devoted to work tasks (Cohen & Eimicke, 1998; Osbourne & Gaebler, 1992). Consequently, both internal deregulation and decentralization are expected to increase employee productivity by removing these structural barriers to the performance of work (Osbourne & Gaebler 1992; Osbourne & Pastrik 1998; Cohen & Eimicke 1998; NPR, 1993). These arguments lead to the expectations that:

H<sub>2</sub>: Increases in perceived workplace bureaucratization will be related to lower productivity in the workplace.

H<sub>2b</sub>: Perceived *formalization* will be negatively associated with public employees' perceptions of productivity in the workplace.

H<sub>2b</sub>: Perceived *red tape* will be negatively associated with public employees' perceptions of productivity in the workplace.

H<sub>2c</sub>: Perceived *centralization* will be negatively associated with public employees' perceptions of productivity in the workplace.

From a scholarly perspective, Merton first identified the possibility that bureaucratic structure could shift employee attention from organizational ends to organizational means (1940). One experimental test of this proposition found that social welfare practitioners and graduate students passed along fewer services to clients when first required to negotiate red tape (Scott & Pandey, 2000). While this research emphasizes the productivity-sapping potential of bureaucratic structure, other research has focused on the increased productivity that can arise from formalization and centralization due to greater coordination and reduced uncertainty (Hage, 1965). In support of these arguments,

formalization and centralization have been linked with higher productivity in human service agencies (Glisson & Yancey-Martin, 1970), New York State personnel agencies (Whetten, 1978) and psychiatric hospitals (Weinman et al., 1979). Thus, the scholarly literature provides an inconsistent portrait of bureaucracy's affects on productivity.

### **Risk-Taking**

A final contention of the government reinvention literature is that reduced bureaucracy will encourage risk-taking behavior among public employees. While risk-taking is not explicitly or normatively defined, it generally seems to connote novel ways of executing job tasks that may or may not work (Cohen & Eimicke, 1998; NCSLPS 1993; DiIulio, Garvey & Kettl, 1993). Internal rules are assumed to discourage risk-taking by narrowing the range of acceptable activity (Cohen & Brand, 1993) and creating noncompliance consequences for departures from acceptable activities (Osborne & Plastrik, 1997). Centralization is anticipated to dampen risk-taking behavior by consuming time in the process of securing managerial approval, encouraging employees to be primarily concerned with higher-up reactions to innovation (Osborne & Plastrik, 1997), and reducing the willingness to take risks by distancing employees from the pursuit of organizational goals (NCSLPS, 1993). Conversely, reducing bureaucratic structure is expected to increase the willingness of employees to take risks (Osborne & Plastrik, 2000). Thus we expect:

H<sub>3</sub>: Increases in perceived workplace bureaucratization will be related to lower risk-taking in the workplace.

H<sub>3a</sub>: Perceived *formalization* will be negatively associated with public employees' perceptions of risk-taking in the workplace.

H<sub>3b</sub>: Perceived *red tape* will be negatively associated with public employees' perceptions of risk-taking in the workplace.

H<sub>3c</sub>: Perceived *centralization* will be negatively associated with public employees' perceptions of risk-taking in the workplace.

Organizational control has long been conceptualized as a deterrent to risk-taking behavior, by communicating an organizational preference for certainty and by potentially penalizing risk-taking behavior that does not pay off (Sitkin & Pablo 1992). Among the scholarly evidence of bureaucracy's affects on employee risk-taking, Bozeman and Kingsley analyzed patterns in survey data collected from middle and upper-level managers in public and private organizations (1998). Their results indicated that, while red tape and compliance monitoring were associated with less perceived individual risk taking, formalization (measured as procedures available for all situations) and rule conformity were associated with more individual risk-taking. Moon, using the same dataset and separating the perceived risk-taking of upper managers from all employees, found that formalization (measured as the extent of records kept) had no statistically significant affect on risk-taking for either managerial type, whereas centralization increased upper-managerial risk-taking but lowered middle-managerial risk taking (1999). Focusing on corporate executives, Caruana and colleagues (1998) detected that centralization decreased risk-taking among executives while formalization increased it.

## **RESEARCH DESIGN**

The data for testing the relationships between bureaucratic structure and public employee behavior were collected from a study of the employees of four cities in a Midwestern state: a small agricultural community (City A); a small city with a light industrial economic base (City B); a mid-size city located near a military base (City C); and an affluent metropolitan city (City D). The mail survey, which was closed in December 2006, was administered to all employees in the four cities, which included a

range of hierarchical levels and departments. The mail survey process yielded a 49 percent response rate, representing a hierarchically diverse employee sample of 645 responses (See appendix 1 for details about the research project and survey design).

## MEASURES AND MODELS

We use three binary dependent variables to operationalize public employee perceptions and behavior: job creativity, workplace risk-taking, and productivity (Descriptive statistics for all variables are described in table 1). Job creativity is derived from responses to the statement: *My position often requires me to “think outside the box” (to be creative)* (0=disagree; 1=agree). Productivity is measured with a self-reported item that asked city employees to rate themselves on a five-point scale (0 to 4) between *Unproductive* and *Productive*. The binary variable is coded one for those who indicated the highest level of productivity with all other responses coded as zero.<sup>1</sup> Workplace risk is measured as a survey respondents’ level of agreement or disagreement with the statement: *Around here it is important to protect yourself or you will be blamed for problems* (0=disagree; 1=agree). This statement is adapted from Alexander and Ruderman (1987) and Cammann and colleagues (1983) and taps the workplace climate for risk-taking.

[Insert Table 1 about here]

The explanatory variables seek to capture bureaucratic structure in the workplace environment, specifically formalization, red tape, and centralization. Formalization is measured using survey respondents’ levels of agreement or disagreement (four point likert scale) with the statement: *Whatever situation arises, my department has written*

*policies and procedures to follow* (adapted from Aiken & Hage, 1968). The formalization variable has a mean of 1.55 and a standard deviation of .82.

Red tape is measured using survey responses to the following question: *If “red tape” is defined as burdensome administrative policies and procedures that have negative effects on the city’s performance, please assess the level of red tape in the City of \_\_\_\_\_*: (Please enter a number in the box between 0 and 10, with 0 indicating no red tape and 10 indicating the highest level of red tape). This survey item was developed from the common measure for perceived organizational red tape (Bozeman, 2000; DeHart-Davis & Pandey, 2005; Moynihan & Pandey, 2007; Rainey, Pandey & Bozeman, 1995). The scale has a mean of 6.01.

The items used in the Centralization Scale are adapted from Aiken and Hage (1966). The Centralization Scale ranges from 0 (low centralization) to 18 (high centralization). Cronbach’s alpha for the scale is 0.738. Centralization is measured as the sum of respondents’ level of agreement with the following statements:

1. I must check with my supervisor before I do almost anything.
2. In general, an employee wanting to make their own decisions in my workplace would be quickly discouraged.
3. Even small matters have to be referred to someone higher up for a final answer.
4. Only supervisors can decide how things are to be done.

Conformity is included as a control variable. The scholarly definition of conformity is the extent to which individual behavior is driven by external rather than internal standards (Kohn, 1977). Thus, from the standpoint of a conformist, “the system” determines behavior and thus may be correlated with creativity, risk-taking or productivity. Conformity is measured by summing responses to a survey question that

asked city employees to rate themselves on a five-point scale between the following opposite characteristics:

Going Along (0) — Arguing (4)  
Accepting the System (0) — Bucking the System (4)  
Stable (0) — Changing (4)  
Accepting Authority (0) — Questioning Authority (4)  
Conforming (0) — Rebellious (4)

The Conformity Scale values range from 0 (highest conformity) to 20 (lowest conformity). The scale is adapted from Ellis and Child's study of managerial conformity (1973). Cronbach's alpha for the scale is 0.813.

Other control variables include college graduate (1=college bachelor's degree or more; 0=not a college graduate); nonwhite (=1); length of city employment, in years; female (=1); the survey respondent's position in the hierarchy, measured with four dummy variables: department heads (=1), supervisors (=1), administrative/policy staff (=1), and front line workers (=1); professional association membership (1=Yes); salary (0=less than \$20,000, 1=\$20,000-\$29,999, 2=\$30,000-\$39,999, 3=\$40,000-\$49,999, 4=\$50,000-\$64,999, 5=\$65,000-\$79,999, 6=\$80,000 and up); and three dummy variables to indicate employment in the four cities. All hypotheses are tested using logistic regression.

## **RESULTS**

This article is concerned with testing the linkages between bureaucratic structure and public employee behavior and perceptions. The general expectation, based on the government reinvention literature, is that fewer bureaucratic controls will be related to increased employee creativity, productivity, and risk-taking. This section revisits the hypotheses and reports the results.

The first set of hypotheses expected that less perceived bureaucratic control would be related to increased public employee creativity (see table 2). Empirical studies have yielded mixed results regarding this proposition, with creativity alternately triggered (Cummings, 1978; Eckval & Ryhammer, 1999; Kelley et al., 1996) and dampened (Amabile, 1988) by bureaucratic control. We find no support for H1a and H1b and report no significant relationships between formalization and red tape and creativity in the workplace. We do find support for H1c, as centralization is negatively associated with workplace creativity ( $p < .01$ ). Regarding control variables, respondents with a college degree compared to those with less than a college degree are significantly less likely to report that: *My position often requires me to “think outside the box.”* One might expect that creativity in the workplace is related to hierarchy in city government. However, we find no significant relationship between hierarchical position and creativity.

[Insert Table 2 about here]

The second set of hypotheses test government reinventionists’ assertions that less bureaucracy will increase employee productivity (see table 3). Scholarly studies provide mixed evidence of this expectation, as control sometimes correlates with higher productivity (Glisson & Yancey-Martin, 1970; Whetten, 1978; Weinman et al., 1979) and sometimes with lower productivity (Scott & Pandey, 2000). In our test of relationships between formalization (H2a), red tape (H2b), and centralization (H2c) and perceived productivity, we find that centralization is significantly related to perceived productivity. Respondents reporting more centralized workplaces are significantly more likely to report lower productivity in the workplace compared to respondents who report low centralization ( $p < .05$ ). Further more, department heads compared to all other respondents

are more likely to report that they are highly productive in the workplace as are respondents with increased tenure working with the city. Respondents in the small city with a light industrial economic base and the affluent metropolitan city report significantly higher productivity levels compared to those in the town based in an agricultural community.

The third set of hypotheses anticipated that less bureaucratic control would be associated with higher workplace risk-taking (see table 3). Scholars have agreed with this assertion in theory (Sitkin & Pablo, 1992), although formalization has been shown to increase risk-taking (Bozeman & Kingsley, 1997; Caruana et al., 1998), while centralization suppresses it for mid-level employees (Moon, 1999). We find support for H3a; formalization is significantly negatively related to perceiving the work environment as risk averse. Rather than confirming H3b and H3c, we find the reverse to be true. In this study, red tape ( $p < .01$ ) and centralization ( $p < .01$ ) are significantly positively related to perceiving a risk-averse work environment – a phenomenon sought for eradication by government reinventors (NPR, 1993; Cohen & Eimicke, 1998). Respondents who perceive higher levels of organizational red tape are more likely to report that *around here it is important to protect yourself or you will be blamed for problems*. Similarly, respondents who report that they work in highly centralized organizations, compared to those in less centralized organizations, are more likely to agree that they need to protect themselves from blame.

## **DISCUSSION**

The results of this study provide mixed support for government reinvention arguments about the effects of bureaucratic control on employee creativity, productivity



and risk-taking. Bureaucratic control in this study appears to have neutral or negative effects on these behaviors, depending on the type of control being employed. Given that reported employee behavior and perceptions are dependent on the type of bureaucratic control employed, the discussion proceeds in order of bureaucratic control analyzed. This approach seeks to compensate for the government reinvention literature's tendency to gloss over distinct forms of bureaucratic control, despite their potentially different consequences for employee behavior.

With regards to formalization, the government reinvention literature generally advocates fewer organizational rules as a means of reducing the structural constraints on public employees. One weakness in this argument is that it ignores the role of effective rules in structuring the relationship between a public organization and its employees. To illustrate, formalization has been conceptualized as clarifying job responsibility (Adler & Borys, 1996), relieving role stress (Jackson & Schuler, 1985), and increasing job satisfaction among salespeople (Michaels et al., 1988), technical professionals (Organ and Greene, 1981), professionals and nonprofessionals (Podsakoff, Williams, & Todor, 1986). Written rules can also authorize employees to implement organizational preferences (Thomas, Walker, & Zelditch, 1986), neutralize the source of authority (Gouldner, 1954), and reduce rule bending (Kelley et al., 1996). This study suggests that formalization is not significantly related to perceived creativity or productivity and is negatively related to workplace risk. This counterintuitive and contradictory finding is quite significant when one considers that written rules are the primary target of reinventionist reforms.

In contrast with formalization, centralization is significantly related to lower perceived creativity and productivity, as expected by government reinventors. Furthermore, centralization is associated with increased risk aversion. Interestingly, respondents in more centralized organizations are more likely to agree that it is important to protect oneself from being blamed for problems while respondents in more formalized organizations are more likely to disagree with this statement. The contrasting results between formalization and centralization may be attributable to the survey items in this study or to the different natures of these bureaucratic controls. Whereas formalized authority rests on the written word, centralized authority resides in individuals – fallible, potentially arbitrary, yet with organizational power – from which employees must secure permission to act. The requirement to seek permission to act creatively can trigger potential conflict with superiors, impose stress when potential responses are unknown, and build resentment within employees when permission to act creatively is denied. Thus centralization may snuff out creative employee behaviors by incurring psychological costs that are higher than most public employees are willing to bear. With regards to productivity, government reinventors appear to have it right: the requirement to secure permission to act – particularly with regards to mundane daily tasks – consumes time that could be devoted to accomplishing these tasks.

Red tape is associated with reporting increased perceptions that the work environment is risk-averse but is not significantly related to perceived productivity or being able to “think outside the box” in one’s job. That red tape increases the potential for workplace blame jibes with evidence that red tape is associated with reduced workplace risk-taking (Bozeman & Kingsley, 1998).

The implications of this study are limited by a gap in knowledge of the mechanisms that lie between bureaucratic control (formalization, red tape, centralization) and employee perceptions and ultimately employee behavior. For example, while formalization has been linked to lower role stress and greater job clarity, are these the attributes that foster creativity, productivity, and a risk-friendly work environment? Are there other attributes of formalization that play a role in achieving these behavioral outcomes? What is it about centralization – authority delivered via interpersonal contact – that results in perceptions of employee suppression? Given that red tape represents ineffective procedure, why is it related to risk-aversion in the workplace, and what is the causal mechanism behind this relationship? While these questions cannot be addressed by the current research, they represent unknowns that future research should seek to undertake to flesh out the portrait of bureaucratic control and public employee behavior.

## **CONCLUSION**

From a government reinvention perspective, less bureaucratic work environments should spark creativity, risk-taking, and productivity in public employees. While this study provides mixed support for these expectations, the results for centralization align with reinvention expectations, appearing as the primary villain in sabotaging these positive behaviors. Unexpectedly, formalization and red tape seem unrelated to perceived creativity, and formalization is negatively associated with risk-taking. These results suggest that government reinventors should consider the distinct nature of different bureaucratic controls and their potentially positive and negative associations with employee perceptions.

## NOTES

1. The original response categories were a five point likert scale (4=productive 3 – 2 – 1 – 0=unproductive). We use the binary variables for two reasons. First, we are primarily interested in a distinct difference in perceptions. The degree of difference between the rankings of productive to unproductive in addition to being imprecise is not the focus of this study. Second, the interpretation of binary dependent variables makes intuitive sense to readers and delineating between respondents who rank themselves at the highest level of productivity clearly have stronger perceptions about their productivity than those ranked lower on the scale. Understanding the variation between ranking oneself as most productive compared to not most productive is more intuitive compared to understanding the variation between five rankings of productivity.

**Table 1: Descriptive Statistics for all Variables**

<b>Dependent Variables</b>	<b>Valid</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. Deviation</b>
Creativity	634	0	1	0.80	0.40
Workplace Risk	638	0	1	0.46	1.01
Productive-Unproductive	640	0	1	0.37	0.48
<b>Independent Variables</b>	<b>Valid</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. Deviation</b>
Formalization	627	0	3	1.55	0.82
Red Tape	640	0	10	6.01	2.46
Centralization (Scale)	625	0	12	4.20	2.71
Conformity (Scale)	628	0	17	6.65	3.60
*College Graduate	617	0	1	0.56	0.50
Nonwhite	599	0	1	0.06	0.23
Job Tenure	612	1	38	10.30	8.28
Department Head	646	0	1	0.06	0.24
Supervisor	646	0	1	0.26	0.44
Administrative or Policy Staff	646	0	1	0.16	0.37
Front Line Worker	646	0	1	0.53	0.50
Professional Association	633	0	1	0.58	0.49
Salary	596	1	7	3.76	1.57
Female	606	0	1	0.28	.449
City A (small agricultural community)	646	0	1	0.06	0.23
City B (small w/light industrial base)	646	0	1	0.14	0.35
City C (mid-size near military base)	646	0	1	0.21	0.41
City D (affluent metropolitan city)	646	0	1	0.59	0.49

\*0=high school graduate, no college, some college but did not graduate

**Table 2: Results from Logit Models Predicting Creativity, Productivity, and Risk-Averse Environment**

Independent Variables	Creativity Think Outside the Box		Productivity		Risk-Averse Environment	
	B	Exp(B)	B	Exp(B)	B	Exp(B)
Formalization	0.090	1.094	0.210	1.234	<b>-0.263**</b>	<b>0.769**</b>
Red Tape	0.001	1.001	0.028	1.028	<b>0.221***</b>	<b>1.248***</b>
Centralization	<b>-0.129***</b>	<b>0.879***</b>	<b>-0.096**</b>	<b>0.908**</b>	<b>0.267***</b>	<b>1.306***</b>
Conformity	0.039	1.040	<b>-0.095***</b>	<b>0.909***</b>	0.048	1.049
Education	<b>-0.484*</b>	<b>0.616*</b>	-0.067	0.935	-0.055	0.947
Nonwhite	-0.712	0.490	-0.003	0.997	-0.092	0.912
Job Tenure	0.013	1.014	<b>0.024*</b>	<b>1.024*</b>	0.011	1.011
Department Head	1.737	5.678	<b>0.811*</b>	<b>2.251*</b>	-0.779	0.459
Supervisor	0.127	1.136	-0.089	0.915	-0.314	0.731
Administrator	0.201	1.223	-0.048	0.953	0.312	1.366
Frontline worker	-0.098	0.907	0.387	1.473	0.276	1.318
Member of Professional Assoc.	<b>0.483*</b>	<b>1.621*</b>	-0.161	0.851	0.035	1.036
Salary	0.139	1.149	-0.047	0.954	0.011	1.011
Female	-0.244	0.784	<b>1.199***</b>	<b>3.317***</b>	-0.377	0.686
City B	0.211	1.235	<b>1.324**</b>	<b>3.758**</b>	-0.358	0.699
City C	-0.065	0.937	0.807	2.242	<b>-1.276***</b>	<b>0.279***</b>
City D	0.073	1.076	<b>1.132**</b>	<b>3.103**</b>	-0.513	0.599
Constant	0.952	2.590	-1.656	0.191	-2.071	0.126
***=p<.01; **=p<.05; *=p<.10	N=504		N=507		N=508	
	-2 Log likelihood=458.789 Cox & Snell R <sup>2</sup> =0.082 Nagelkerke R <sup>2</sup> =0.131		-2 Log likelihood=592.044 Cox & Snell R <sup>2</sup> =0.131 Nagelkerke R <sup>2</sup> =0.179		-2 Log likelihood=562.708 Cox & Snell R <sup>2</sup> =0.233 Nagelkerke R <sup>2</sup> =0.312	
	Chi <sup>2</sup> =43.391 Sig.= 0.000		Chi <sup>2</sup> =71.072 Sig.= 0.000		Chi <sup>2</sup> =134.893 Sig.= 0.000	

## Appendix 1

**Study Design:** The study centers upon employees of four cities in a Midwestern state: a small agricultural community (City A); a small city with a light industrial economic base (City B); a mid-size city located near a military base (City C); and an affluent metropolitan city (City D). These cities were included in part because of their willingness to participate in the study, which was conducted in partnership with city administrative officials who participated in order to generate employee feedback on a range of workplace issues.

The study, conducted between June 2005 and December 2006, included two parts. First, researchers conducted 90 in-person interviews with city employees from a range of hierarchical levels and departments in the four cities. Second, using the information gathered from the interviews, the researchers administered a mail survey distributed to all employees of each city (n=645).

Mail survey questions pertained to workplace characteristics and perceptions of bureaucracy. The survey process included an alert letter from the city manager's office to employees expressing support for the study and encouraging participation and a survey package later distributed with employee paychecks that contained a personalized cover letter inviting survey participation and stressing the confidentiality of results. The package contained the mail survey; a stamped return envelope addressed to the researcher's university; and a postcard with a survey identification number that employees were asked to return separately from the mail survey. The separate postcards enabled survey responses to be tracked without enabling returned surveys to be linked with individual survey participants. This process yielded response rates of 61 percent in City A (n=36), 83 percent in City B (n=90), 43 percent in City C (n=136), and 45 percent in City D (n=383). The overall response rate was 49 percent (n=645 or 1325).

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