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Research Article

More than Pathological Formalization: Understanding Organizational Structure and Red Tape

Abstract: *Most research has conceptualized red tape as being a pathological subset of organizational formalization. This article argues that focusing on a single dimension of organizational structure as a red tape driver is unrealistically narrow. Specifically, the article advances hypotheses as to how organizational centralization and hierarchy affect perceived red tape, in addition to formalization. This reasoning is tested using survey data from employees of three local government organizations in the southeastern United States. All three hypotheses are supported: higher levels of organizational formalization, centralization, and hierarchy are associated with more red tape. Open-ended comments also indicate that red tape is not solely perceived as related to formalization. The findings imply that red tape is a multifaceted perception of organizational structure rather than perceived pathological formalization.*

Evidence for Practice

- Research suggests that red tape tends to correlate with organizational effectiveness and public service motivation, making red tape a matter of managerial concern.
- When employees talk about red tape, they are referring to structural aspects of the workplace that are frustrating, including centralized decision making, tall hierarchies, and burdensome rules.
- While red tape is subjective, public organizations should carefully evaluate rule effectiveness, consider pushing decision making downward, and investigate whether there are excessive managerial layers.

Public administration scholars have struggled for decades to pin down the concept of organizational red tape. Most organizational red tape studies have followed Bozeman's definition of "rules, regulations, and procedures that remain in force and entail a compliance burden for the organization but have no efficacy for the rules' functional object" (1993, 283). In this conceptualization, red tape is considered a pathological subset of formalization, where formalization denotes the intensity of written rules within an organization (Bozeman and Scott 1996). As such, formalization is a necessary but insufficient condition for red tape. Yet red tape is commonly associated with a wide variety of bureaucratic ills that may or may not pertain to formalization (e.g., Bozeman and Feeney 2011; Goodsell 2004).

This article introduces a different perspective on the rules and red tape debate and argue that impressions of red tape are based on multiple dimensions of overall organizational structure, not just formalization. While many red tape studies equate red tape with impressions of pathological rules and procedures (e.g., Kaufmann and Feeney 2014; Pandey and Kingsley 2000; Pandey and Scott 2002), the literature is mostly silent on the causes of these impressions. In particular, little is known about how organizational centralization and hierarchy may affect the extent to which an individual perceives red tape.

First, the level of centralization affects where decision-making power is concentrated in an organization (e.g., Pugh et al. 1968). Employees working in a more centralized organization need to defer decision making upward in the organization, whereas a decentralized organization pushes decision power downward in the organization. Research on the outcomes of (de)centralization has produced mixed results, but many studies have shown that decentralization can positively affect employee motivation, employee loyalty, and organizational performance (Adler and Borys 1996; Baum and Wally 2003; Hill and Pickering 1986). In a decentralized organization, employees are provided with many opportunities to help shape their work processes, whereas in a centralized organization, employees need to wait constantly for input from their supervisors before progressing with their work or starting a process (e.g., Fredrickson 1986; Schminke, Ambrose, and Cropanzano 2000). In this light, decentralization has been suggested as a solution for cutting red tape

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in public agencies (Brewer and Walker 2010a; Jung and Kim 2014), which implies that more centralized organizations are associated with more red tape.

Organizational hierarchy is also expected to affect red tape perceptions. Increased levels of hierarchy are often the result of a need for more managerial control, which may turn into over-control and lead to perceived red tape (Bozeman and DeHart-Davis 1999; Bozeman and Feeney 2011). Furthermore, more hierarchical organizations are characterized by a multitude of internal stakeholders that are required to participate in decision-making processes, thus slowing down decision making and resulting in perceived red tape (Turaga and Bozeman 2005). Again, impressions of red tape are expected to be affected by how the organization is structured more generally.

The data for exploring the influence of structural organizational characteristics on red tape perceptions come from three local government organizations in the southeastern United States. The survey was distributed via Qualtrics to all employees and yielded 2,008 observations, representing a response rate of 76 percent. The survey instrument included measures of red tape without any anchoring definition. The survey responses are analyzed using ordered probit regression to study the influence of structural organizational characteristics on red tape. Furthermore, for one organization in this sample, administrative data on hierarchy were available and utilized, which allows for comparison of the effects of both a perceptual and administrative organizational structure measure on red tape. Respondents were also asked to define red tape, resulting in 677 usable red tape constructions. These responses were coded into nine different categories to reflect the prevalence of organizational formalization, centralization, and hierarchy in the context of red tape definitions provided by employees.

The structure of this article is as follows: First, red tape hypotheses related to organizational formalization, centralization, and hierarchy are introduced. In the next section, data and methods are described, followed by a section that reports results. The final section discusses the study's contributions, limitations, and avenues for future research.

Toward a More General Perspective on Organization Structure and Red Tape

Red tape research has historically focused on formalization as the primary influence on red tape (Bozeman and Feeney 2011). This is partly due to the way red tape has mostly been operationalized, as "rules, regulations, and procedures that remain in force and entail a compliance burden for the organization but have no efficacy for the rules' functional object" (Bozeman 1993, 283). In a departure from red tape research, this article conceptualizes red tape as a function of organizational structure generally and of formalization, centralization, and hierarchy specifically. Centralization and hierarchy are constructed as distinct aspects of organizational structure, based on early theory and evidence delineating the two concepts (Aiken and Hage 1966; Pugh et al. 1968; Hall 1963; Rainey 2014).

Formalization and Red Tape

Red tape scholars have grappled with the distinctions between formalization and red tape for some time (e.g., Bozeman and Scott 1996; Kaufmann and Feeney 2012). Formalization relates to the degree of written rules and is considered a neutral attribute of organizational structure (e.g., Pugh et al. 1968). Early work in organization studies focused on conceptualizing and measuring formalization so as to allow for comparative research on this structural property of organizations (Hage and Aiken 1967; Hall, Johnson, and Haas 1967; Pugh et al. 1968). Subsequent research has mostly looked at outcomes of formalization, at both the individual level and the organization level (Adler 1999; DeHart-Davis, Chen, and Little 2013). Some of the literature shows that formalization is positively related to work alienation, stress levels, absences, powerlessness, and self-estrangement (Agarwal 1993; Aiken and Hage 1966; Kakabadse 1986; Rousseau 1978). Other research has found that more formalization may result in higher levels of efficiency (Adler and Borys 1996), greater organizational commitment (Michaels et al. 1988), improvement of dynamic capabilities (Zollo and Winter 2002), and mobilization of local knowledge (Ahrens and Chapman 2004). In sum, the effects of formalization are context specific and may be neutral, positive, or negative.

While formalization and red tape were not seen as conceptually distinct in the past (see e.g., Baldwin 1990; Buchanan 1975), scholars have begun to more carefully tread their meanings (Bozeman 2012). Bozeman and Scott (1996) distinguish the two by equating organizational formalization with physiology, while red tape indicates pathology. Borry (2016) carries this metaphor further to call formalization an organization's skeleton, which then can become diseased by red tape. In this light, scholars have looked at associations between red tape and such concepts as organizational effectiveness (Pandey, Coursey, and Moynihan 2007), risk-taking behavior (Bozeman and Kingsley 1998), satisfaction (Giauque et al. 2012; Tummers et al. 2016; Kaufmann and Tummers 2017), and public service motivation (Moynihan and Pandey 2007).

Research in the pathological formalization tradition—which mostly uses Bozeman's (1993) definition of organizational red tape—assumes that manifestations of red tape can be identified by accurately categorizing (parts of) an organization's rule stock as being unnecessarily burdensome. This approach implies a straightforward linear relationship between formalization and red tape: "if we think of rules—especially controlling rules—as having an 'underlying probability' of turning into red tape, then more rules will likely mean more red tape" (Bozeman 2000, 131).

The conceptualization of red tape as pathological formalization has proven most popular in the literature, but some authors argue that understanding *perceptions* of red tape (and the causes thereof) is as important as identifying unnecessarily burdensome formalization using some set of objective criteria. For example, Pandey and Kingsley (2000, 782) define organizational red tape as "impressions on the part of managers that formalization (in the form of burdensome rules and procedures) is detrimental to the organization." In this light, Brewer and Walker (2010a, 2010b) note that perceived red tape levels differ across internal stakeholder groups, while Kaufmann and Feeney (2014) use a survey experiment to show that red tape is driven not just by procedural length but also by the favorability of the procedural outcome. Unlike prior research, perceived red tape is not expected to merely

be a reflection of (perceived) organizational formalization. Rather, organizational formalization is construed as part of a larger puzzle linking organizational structure to perceived red tape. This leads to the first hypothesis:

> **Hypothesis 1**: There is a positive relationship between organizational formalization and perceived red tape.

Centralization and Red Tape

Centralization, which is the upward locus of power in an organization, has been included as a control variable in a number of organizational red tape studies (e.g., Feeney 2012; Scott and Pandey 2005), but no detailed theoretical arguments have been put forward as to how this structural characteristic affects perceived red tape. In general, the level of centralization involves a trade-off: while decentralization allows for better utilization of information scattered throughout the organization, centralization provides managers more managerial control (e.g., Zabojnik 2002). Managers who are unwilling to delegate impede employee participation in decision making and goal setting and restrict information flows (Pandey and Rainey 2006). This may harm employee satisfaction (Driscoll 1978; Willem, Buelens, and De Jonghe 2007) and lead to perceived red tape.

It has been argued that centralized organizational structures may develop more red tape as "top managers want to ensure a control over detailed decisions and actions of lower-level units" (Moon 1999, 34). This type of dynamic, whereby managers create red tape as a side effect of exerting control, has been referred to as managerial over-control (Bozeman and Feeney 2011). In this light, Brewer et al. (2012) argue that more rapid absorption of information and greater responsiveness to change taking place in decentralized organizations will limit red tape. In sum, more centralized organizations limit employee participation in decision making and run a greater risk of managerial over-control, thus increasing the likelihood of perceived red tape. This leads to the second hypothesis:

> **Hypothesis 2**: There is a positive relationship between organizational centralization and perceived red tape.

Hierarchy and Red Tape

Another important structural organizational characteristic for understanding perceived red tape is hierarchy. While managerial hierarchy is fundamental for structuring unified working systems (Jacques 1990), it also makes it easier for individuals in higher positions to deflect responsibility for unfavorable outcomes and claim credit for favorable outcomes vis-à-vis subordinates (Adler and Borys 1996). Ivancevich and Donnelly (1975) find that salespeople working in flat organizations are more satisfied, perceive less stress, and perform more efficiently compared with their counterparts working in medium and tall organizations. Wright and Pandey (2009) find in a U.S. local government context that the prevalence of transformational leadership is lower in more hierarchical organizations, while Moon (1999) observes that flatter organizations promote managerial entrepreneurship.

In a red tape context, the existence of many managerial layers in hierarchical organizations implies that decision making involves a large number of internal stakeholders (Turaga and Bozeman 2005). In turn, it takes employees longer to complete key organizational tasks, such as hiring and firing personnel, buying equipment, and reorganizing organizational units. The time to completion for such tasks, known in the literature as administrative delay, is an important indicator of red tape (e.g., Bozeman and Feeney 2011; Bozeman, Reed, and Scott 1992). Walker and Brewer (2008) find that higher hierarchical levels are responsible for part of the red tape observed at lower hierarchical levels, which implies that an organization with many managerial layers will slow down decision making and result in additional perceived red tape. Similarly, Turaga and Bozeman (2005) asked public managers to identify an important decision that they were involved in and to indicate the level of red tape associated with this decision. One of the study's main findings is that more hierarchical organizations have more red tape in decisions. As a result, higher levels of perceived red tape are expected in more hierarchical organizations.

> **Hypothesis 3**: There is a positive relationship between organizational hierarchy and perceived red tape.

The conceptual model is summarized in figure 1. The "pathological formalization" conceptualization of red tape is shown in the middle of the figure. This "organizational structure" conceptualization of red tape captures not only formalization but also centralization and hierarchy.

Methods

Data Set

The hypotheses are tested using data collected from surveys distributed to the employees of three local government organizations. These three organizations, located in the southeastern United States, are participants in the Local Government Workplaces Project, a data collection effort that began in 2004 to understand organizational behaviors in municipal and county organizations. The first organization is a large metropolitan area city; the second organization is an urban department of social services; and the third is a large metropolitan area suburb. Surveys were distributed to all organizational members of each organization; a total of 2,657 employees were surveyed, of which 2,008 responded, for a response rate of 76 percent.

Model and Measures

Ordered probit modeling, a nonlinear regression model that is an extension of logistic regression (Long 1997, 7) is used to test

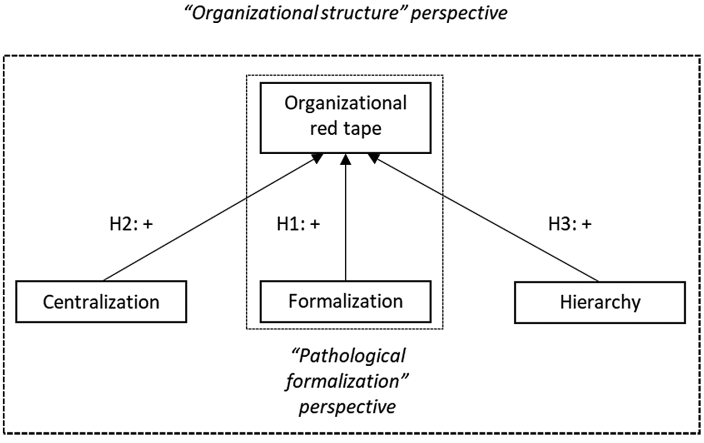

Figure 1 Organizational Structure and Red Tape

the hypotheses. As opposed to linear regression modeling, which assumes a continuously distributed dependent variable, ordered probit modeling is appropriate for analyzing variables that have two or more categorical outcomes that can be ordered but for which the distances between categories are unknown (Long 1997, 114). The model seeks to explain red tape as a function of formalization, centralization, and hierarchy, controlling for nonconformity, gender, supervisory status, and employing organization of the respondent.

The dependent variable in this study, red tape, is measured on a nine-point scale. Respondents were asked without any anchoring definition to indicate how much red tape their department has on a non-numeric nine-point scale between no red tape and high red tape. Most existing red tape studies have used the General Red Tape Scale, or some adaptation thereof, which defines red tape as "burdensome administrative rules and procedures that have negative effects on the organization's effectiveness" (Rainey, Pandey, and Bozeman 1995, 574). Crucially, this popular red tape measure centers on the role of formalization as a red tape predictor. In contrast, the aim in this study is to take an agnostic approach toward organizational structure and red tape that does not frame red tape in terms of formalization, which is why no anchoring definition is included. The mean red tape response is 4.932, which is higher than the center point of the scale, skewing it somewhat toward the "high red tape" end of the spectrum.

The main independent variables in this study include formalization, centralization, and hierarchy. The formalization measure is taken from DeHart-Davis and colleagues (DeHart-Davis, Chen, and Little 2013; DeHart-Davis, Davis, and Mohr 2014). Respondents were asked to indicate how many of their department's rules can be described as "written," choosing from five options: no rules, few rules, some rules, many rules, and all rules. The mean score for this formalization measure shows that respondents on average rate their workplace as more formalized than not.

The second independent variable of interest, centralization, is a summative scale of three survey items. These three items are all adapted from Aiken and Hage (1968), and they ask respondents to indicate, using a seven-point scale, their strength of agreement with the following:

- I must check with my supervisor before I do almost anything.
- Even small matters have to be referred to someone higher up for a final answer.
- In general, an employee wanting to make their own decisions in my workplace would be quickly discouraged.

Responses to these three items were summed to create one centralization measure that ranges from 0 to 18. The mean for this scale indicates that respondents, on average, perceive their workplace to be less rather than more centralized. The scale's Cronbach's alpha is 0.87.

In line with Turaga and Bozeman (2005) and Welch and Pandey (2007), the third independent variable, hierarchy, is measured with a single item. Respondents indicated the perceived levels in their chain of command on a non-numeric nine-point scale between few levels and many levels. Mean responses indicate that respondents tend to perceive their workplaces as more hierarchical than not.

Four control variables are included in the model: nonconformity, gender, supervisory status, and local government organization. Nonconformity captures an individual's general predisposition toward playing by the rules of the game. Individuals with more nonconforming personalities are expected to more likely perceive rules as unnecessarily burdensome and restrictive, and thus, as red tape (DeHart-Davis 2009b). Nonconformity is measured as a summative scale of three items, all adapted from Child and Ellis (1973). Respondents were asked to indicate where they would place themselves between the following characteristics using a nine-point scale:

- Going Along with the System—Bucking the System
- Accepting Authority—Questioning the System
- Conforming—Rebelling

The summative scale resulted in a range of 0 to 24, with the average of almost six; employees tend to be more, rather than less conforming. The Cronbach's alpha for nonconformity is 0.92.

Gender is included as a control variable, as women may feel more strongly that formalization contributes to creating a level playing field in the organization than men (DeHart-Davis 2009a; Portillo and DeHart-Davis 2009), thus lowering perceived red tape. Women make up 38 percent of the sample. In line with other studies that distinguish between different internal rule stakeholders (e.g., Brewer and Walker 2010a, 2010b; Kaufmann and Tummers 2017), supervisory status is included as a control. Roughly 28 percent are supervisors, department heads, or managers. Fifty-six percent of observations come from organization 1, 16 percent from organization 2, and 28 percent from organization 3. Descriptive statistics and correlations can be found in table 1.

Consistent with theoretical expectations, formalization, centralization, and hierarchy are positively and significantly correlated with red tape, although the magnitude of the correlations are much stronger for centralization and hierarchy ($r = 0.38$ and 0.31, respectively) than formalization ($r = 0.05$). Of the control variables, nonconformity is positively correlated with red tape in a statistically significant way. Organization 2 tends to register higher red tape, while organization 3 registers lower red tape.

Common Source Bias

Since a single data source measures both the dependent and independent variables, common source bias may be an issue. Common source bias may be present when data measuring different phenomena come from the same source (Favero and Bullock 2015; Jakobsen and Jansen 2015). Similarly, common methods variance can lead to bias, though not necessarily, when all variables are collected using the same method (Podsakoff, MacKenzie, and Podsakoff 2012). In both cases, concerns about potentially inflated correlations and biased results arise. In the present research, the use of surveys (method) to collect information from individuals (source) about the phenomena under investigation raises some concern about potential methods or source bias. Although George and Pandey (2017) argue that common source bias concerns in public administration are overstated, the present authors agree that steps

Table 1 Descriptive Statistics of Study Measures

Item	*N*	Range	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Red Tape	1903	0–8	4.93	2.15	1	–	–	–	–	–	–	–	–	–
2. Formalization	1901	0–4	2.96	0.90	0.05*	1.00	–	–	–	–	–	–	–	–
3. Centralization	1941	0–18	8.16	4.95	0.38**	–0.04	1.00	–	–	–	–	–	–	–
4. Hierarchy	1942	0–8	4.47	2.81	0.31**	0.13*	0.30**	1.00	–	–	–	–	–	–
5. Nonconformity	1916	0–24	5.57	4.83	0.19**	–0.18**	0.14**	0.08**	1.00	–	–	–	–	–
6. Women	1942	0–1	0.38	0.45	–0.03	–0.14*	0.03	–0.11**	–0.05*	1.00	–	–	–	–
7. Supervisor	1895	0–1	0.28	0.45	0.01	0.01	–0.18**	–0.05*	0.03	–0.15**	1.00	–	–	–
8. Organization 1	1126	0–1	0.56	0.50	0.04	0.05*	–0.06*	0.02	0.00	–0.22**	–0.12**	1.00	–	–
9. Organization 2	326	0–1	0.16	0.37	0.07**	–0.07**	0.13**	0.09**	0.00	0.49**	–0.09**	–0.50**	1.00	–
10. Organization 3	526	0–1	0.28	0.45	–0.09**	0.00	–0.04	–0.09**	0.00	–0.18**	0.20**	–0.70**	–0.27**	1.00

**$p < .01$; *$p < .05$.

need to be taken during data collection and analysis to help lessen the concern about potential bias.

Podsakoff, MacKenzie, and Podsakoff (2012) recommend several procedural and statistical remedies to reduce the potential for common methods bias in particular. Three of these remedies are relevant here. The first two relate specifically to the survey measures employed in this research. First, Podsakoff, MacKenzie, and Podsakoff (2012, 549) recommend that measures, particularly those items relating to different constructs, have "temporal, proximal, or psychological separation." That is, measures for different constructs should not be presented to respondents all at the same time or close together. Proximal separation refers to the physical distance between measures on the survey instrument; if items measuring different constructs are presented too closely together, the respondent may use previous questions to help answer latter ones, thus potentially increasing correlations among those items (Podsakoff et al. 2003; Podsakoff, MacKenzie, and Podsakoff 2012).

Second, it is recommended that items corresponding to different constructs use dissimilar response scales (Podsakoff, MacKenzie, and Podsakoff 2012). When response scales are inconsistent across items, it can help prevent the respondent from answering survey items in ways that are impacted by the scale properties themselves. Each variable in this study included items that were not grouped together under the same prompt and included different scale properties. For example, the red tape measure was a stand-alone question, while the formalization variable was included in a question block asking about rule characteristics. Hierarchy was measured by a stand-alone question, while centralization measures were included in a series of questions about decision making. Finally, nonconformity items were placed together but separate from other variables of interest. In addition, these items included different response options, all of which were described earlier in the data and methods section. Some of these responses required level of agreement, while others required responses between two opposing characteristics. The proximal separation and scale variation among these items of interest in this study likely reduce the potential for common methods bias.

Third, Podsakoff, MacKenzie, and Podsakoff (2012) recommend collecting independent and dependent variables from different sources. This suggestion is echoed among public administration scholars as well (Favero and Bullock 2015; Jakobsen and Jensen 2015; Meier and O'Toole 2013). An ideal solution would be to collect the dependent variable or independent variables from a different source. Unfortunately, administrative data, or data from other sources, are not available to the authors for all variables. However, the authors were able to retrieve the annual operating budget document for fiscal year 2016 for organization 1, in the same year in which the survey was administered. The operating budget document not only includes detailed financial information but also provides organizational charts for most of the city's departments. These organizational charts include information about the number of layers for each department, which, in turn, provides an alternative measure for hierarchy that is not part of the survey data. The number of layers in organization 1 ranges from two to five. Although this is a rather crude hierarchy measure, the correlation with the hierarchy measure taken from the survey is 0.58. As a result, the authors are more confident that these survey responses capture organizational reality.

The names of individual departments with the number of respondents (departments included here are only those an organizational chart is provided in the 2016 operating budget document and with a minimum of 10 survey respondents), their mean hierarchy survey scores, and the number of layers data taken from the organizational charts can be found in table 2. The hierarchy measure from the organizational chart, rather than the survey measure, is also included in later statistical analyses as a robustness check. Though the robustness check can only be performed on one of the three organizations studied, the consistent results across both models lessen the concern for common source bias.

Coding of Red Tape Definitions

In order to add detail to the empirical analysis and corroborate the statistical results, respondents in the organizations 2 and 3 were given the opportunity to provide their own definition of red tape. In total, 703 respondents provided input, but 26 of those merely responded with nonapplicable answers (coded "N/A") or indicated that they did not understand the question. This left 677 usable red tape definitions. The coding of responses took place in two stages. In the first stage, each of the three authors coded all of the definitions independently, creating their own tentative categorical codes. After this first stage, the tentative categories were discussed among the three

Table 2 Hierarchy Survey and Organizational Chart Data for Organization 1

Department	*n* (survey)	Hierarchy (survey)	Hierarchy (org. charts)
Police	206	6.2	4
Fire	194	5.6	5
Transportation and Facilities	47	5.3	2
Public Works	139	4.2	2
Water Resources	36	4.1	3
Inspections and Permits	39	4.1	3
Planning	19	3.7	3
Utilities	88	3.6	2
Parks and Recreation	174	3.5	3
Finance	21	3.4	3
Technology Services	21	2.1	3
Town Manager's	12	2.3	2
Human Resources	17	2.2	2

authors, and a finalized set of nine categories were agreed upon. Table 3 provides a description of the categories and illustrative definitions from the data set.

In the second stage of coding, the first and second author again coded each definition independently, this time using the finalized set of nine codes. There was coding agreement between the two authors on 637 of the 677 definitions (94 percent). For the remaining 40 definitions, the third author served as the code resolver. Roughly 18 percent of the definitions were coded using multiple categories, which resulted in a total code count of 818.

Results

Ordered Probit Modeling

Table 4 reports the results of the ordered probit model, which seeks to explain red tape as a function of formalization, centralization, and hierarchy, controlling for nonconformity, gender, and supervisory status of the respondent.

Expectations for the relationships between red tape and formalization, centralization, and hierarchy are supported. McKelvey and Zavoina's R^2, which for ordinal outcomes most closely approximates the ordinary least squares R^2 statistic (Long and Freese 2003, 163), is 23 percent.

Within the model, fully standardized ordered probit coefficients indicate the magnitude of each variable's influence on red tape. Centralization exerts the greatest influence on red tape, followed by hierarchy. Formalization exerts a distant third influence. Nonconforming personality and supervisory status correlate with higher red tape, whereas gender does not. Organization 3 has significantly lower perceived red tape than organization 1, the referent point in the dummy variable; organization 2's perceived red tape is not significantly different from that of organization 1.

Because marginal change can be a misleading indicator when data are categorical, Long and Freese (2006, 215) recommend using the discrete change which, for categorical variables, can represent the probability of a particular variable value given a shift from the minimum to the maximum values of the independent variable. Accordingly, figure 2 depicts the changes in predicted probabilities of red tape given a shift from minimum to maximum values of centralization, hierarchy, and formalization.

Consistent with the model results, increases in formalization, centralization, and hierarchy increase the probability of high red tape and lower the probability of low red tape. However, the effects are not equivalent across structural attributes.

Table 3 Description and Illustrative Definitions of Red Tape Categories

Category	Description and Definitions
Formalization	Rules, regulations, formalization • *"Rules or regulations that must be followed before you are able to complete a specific function"* • *"Rules and/or regulations that prevent me from doing my job as effectively and efficiently as possible"*
Centralization	Approval required of direct manager or supervisor, lack of autonomy • *"In order to do anything we have to pass it by the program manager. The supervisor is not free to make decisions about anything before getting the approval of the program manager"* • *"I view 'red tape' as constantly needing permission and supervision"*
Hierarchy	Chain of command, many layers of approval, hierarchy • *"The term implies that there is often too many layers that have to be passed through in order for things to get done. City Management and City Council are often involved in too many decisions that should be left to the Departments"* • *"Has to be sent through the chain of command to see how and if it can be done"*
Process	Steps to take, hoops to jump through, process • *"Processes to complete the job"* • *"Hoops that you have to jump through to get something done"*
Delay	Slowing down of activities or service delivery, delay • *"Difficulty getting something meaningful accomplished in a timely manner"* • *"Time-consuming effort that gets in the way of accomplishing a goal"*
Paperwork	Forms, paperwork • *"Everything is documented on paper"* • *"The amount of paperwork to get approvals, etc."*
Bureaucracy	Bureaucracy, bureaucratic practices • *"Excessive bureaucracy"* • *"Bureaucratic procedures that must be done, usually concerned with accountability, and often quite tedious"*
Barriers	Restrictions, obstacles, barriers • *"Obstacles that make it harder to do my job"* • *"Red tape to me means barriers that I could come across when trying to suggest or implement changes"*
Other	Definitions that do not fit into any of the other categories, including references to unwritten rules or politics • *"Some underlining, unspoken rule that can interfere with how I am able to perform job tasks"* • *"Political unfairness or employee favoritism"*

Table 4 Structural and Individual Red Tape Determinants

	b	z	P>|z|	bStdXY
Formalization	0.09	2.94	0.00	0.07
Centralization	0.08	13.15	0.00	0.34
Hierarchy	0.07	6.97	0.00	0.18
Nonconformity	0.04	6.38	0.00	0.15
Women	–0.01	–0.17	0.87	0.00
Supervisor	0.22	4.12	0.00	0.09
Organization 2	–0.02	–0.17	0.86	0.00
Organization 3	–0.21	–3.71	0.00	–0.08

$n = 1{,}793$.
McKelvey & Zavoina's $R^2 = 23\%$

Centralization exerts the most influence on the highest red tape levels, followed by hierarchy and then formalization. To illustrate, going from the minimum to maximum value of centralization increases the probability of a survey respondent indicating the highest level of red tape by 26 percent; this figure is 9 percent for hierarchy and only 5 percent for formalization. Furthermore, centralization lowers the probability of a survey respondent indicating the lowest level of red tape level by 8 percent in comparison with 3 percent and 2 percent of hierarchy and formalization, respectively. In between the lowest and highest levels of red tape, the influence of hierarchy or formalization reaches at most 7 percent and 8 percent, respectively, compared with upwards of 17 percent for centralization. Thus, centralization exerts far more influence on red tape perceptions than hierarchy or formalization.

As an additional analytical step, the model was estimated again using only organization 1 data, for which the authors had constructed a measure of hierarchy from organizational charts. As table 5 suggests, the model results are consistent whether administrative or perceptual measures of hierarchy are used.

Red Tape Definitions

Table 6 reports the counts for the coded red tape definitions.

Elicited red tape definitions generated significant variance, which is in line with the perceptual notion of red tape as encompassing a range of different elements that are not necessarily related to formalization (e.g., Goodsell 2004; Kaufmann and Feeney 2014). Just under 21 percent of red tape definitions mention formalization, while 10.3 percent and 7.2 percent of the definitions relate to hierarchy and centralization, respectively. These findings indicate that the vast majority of respondents does not necessarily associate red tape with formalization and that hierarchy and centralization jointly account for almost one-fifth of the coded definitions.

Interestingly, more than 60 percent of all red tape definitions do not mention any dimension of organizational structure explicitly. Instead, many respondents refer to inefficient processes or barriers that they encounter in the workplace. Again, this finding underlines that formalization is but one possible driver of perceived red tape. It is also important to note that a conservative approach was taken when coding red tape definitions as formalization, centralization, or hierarchy. While red tape definitions needed to explicitly refer to these concepts in order to be coded as such, organizational structure may nonetheless underlie red tape definitions coded as "process," "delay," or "barriers." Hence, future research may want to delve more deeply into specific red tape definitions to assess organizational structure as an implicit rather than explicit driver.

Conclusion

Research on organizational structure and red tape has for the most part focused on the role of formalization. This narrow focus can be explained in part by the fact that most red tape scholars have built on Bozeman's conceptualization of red tape as being a pathological subset of formalization, which implies that higher levels of formalization means more red tape. An alternative view, to which this study adheres, argues that red tape is perceptual in nature and captures multiple dimensions of organizational structure. As such, red tape is not merely an indicator of pathological rule stocks, but encompasses various structural drivers that can affect an individuals' perceived level of red tape, specifically, centralization and hierarchy.

Ordered probit modeling of survey data collected from the employees of three local government organizations in North Carolina tests this reasoning. The analysis supports all the hypotheses regarding organizational structure and perceived red tape. That is, individuals perceive higher levels of red tape if they work in more formalized, centralized, and hierarchical organizations. Interestingly, and in support of the organizational structure conceptualization of red tape, formalization has the weakest effect of the three organizational characteristics.

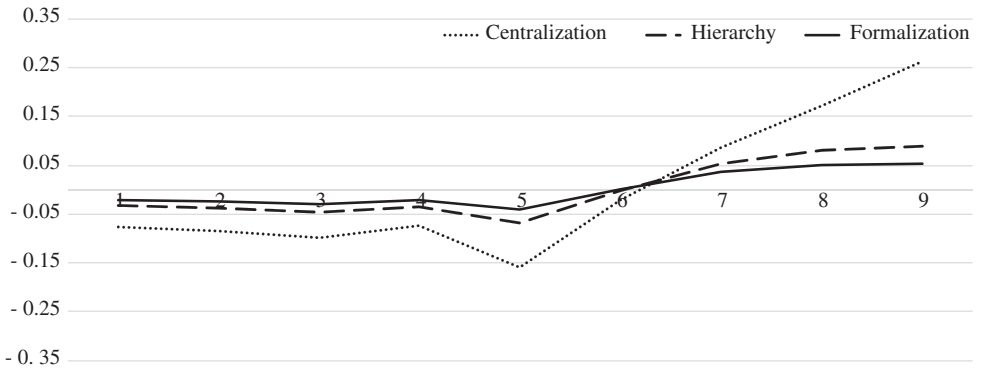

Figure 2 Changes in Probability of Red Tape Values Based on Change from Minimum to Maximum Values in Centralization, Hierarchy, and Formalization

Table 5 Predicting Red Tape Using Administrative vs. Survey Measures of Hierarchy

	Administrative Measure				Survey Measure			
	b	z	P>|z|	bStdXY	b	z	P>|z|	bStdXY
Formalization	0.15	3.70	0.00	0.11	0.16	3.93	0.00	0.12
Centralization	0.10	12.56	0.00	0.41	0.09	11.02	0.00	0.37
Hierarchy	0.12	3.92	0.00	0.12	0.08	5.81	0.00	0.20
Nonconformity	–0.03	–4.55	0.00	–0.14	–0.03	–4.12	0.00	–0.13
Women	–0.05	–0.62	0.54	–0.02	0.00	–0.06	0.95	0.00
Supervisor	0.22	2.70	0.01	0.08	0.24	2.98	0.00	0.08

$n = 986$.
McKelvey & Zavoina's R^2 25% 27%

The research team also coded 677 red tape definitions provided by respondents to determine the prevalence of formalization, centralization, and hierarchy in employee thinking about red tape. Just over one-fifth of all definitions mention formalization, which supports the view that red tape entails more than pathological formalization alone. Furthermore, the centralization and hierarchy categories jointly account for more than 17 percent of the definitions, which provides further evidence that formalization is not the only salient organizational structure dimension when it comes to perceived red tape. Since the definitions relating to process, delay, or barriers likely reflect formalization, centralization, or hierarchy, the importance of these three structural characteristics may be even more pronounced.

The current study also has a number of limitations. First, the research uses data for independent and dependent variables from the same source, which means that common source and methods bias may be present (Favero and Bullock 2015; Jakobsen and Jansen 2015). As one reviewer pointed out, survey respondents may not necessarily distinguish clearly between the centralization and hierarchy items, despite the fact these two concepts have been established in the literature as capturing different organizational structure dimensions. While it is important to note that organizational structure is often measured using self-reported data (e.g., Ferrell and Skinner 1988; Zheng, Yang, and McLean 2010), steps were taken to lessen the potential for the study's results to be biased. Survey measures were presented separately in the surveys and included various response options (e.g., Podsakoff, MacKenzie, and Podsakoff 2012). These characteristics help prevent the survey respondent from answering subsequent questions in such a way that is biased by previous questions. Furthermore, a robustness check was conducted by using administrative data for one of the main independent variables in the study, which presented similar results. Nonetheless, future research could use different administrative data sources to capture organizational structure from a more "objective" standpoint, thus alleviating the potential for common source bias. Indeed, a research design that explicitly incorporates perceptual and administrative measures of both organizational structure and red tape could shed further light on the extent to which employee perceptions capture organizational reality.

Table 6 Categorical Count of Red Tape Definitions

Category	Count	Percentage
Formalization	*169*	*20.7*
Centralization	*59*	*7.2*
Hierarchy	*84*	*10.3*
Paperwork	37	4.5
Bureaucracy	38	4.6
Delay	44	5.4
Barriers	91	11.1
Process	148	18.1
Other	148	18.1
TOTAL	**818**	**100**

Second, the focus of the current study is on overall organizational structure dimensions and red tape, and consequently it does not include a more fine-grained structural perspective. Yet it may well be the case that (perceptions of) organizational structure and red tape differ among subunits within government organizations. Early organizational research emphasized that studies of agency behavior should take into account differences in the structure of government organizations (e.g., Blau 1963). Future research may therefore add a red tape perspective to the rich literature on structure and performance at the level of departments and teams (e.g., Bunderson and Boumgarden 2010; Stewart and Barrick 2000).

Third, future research may add complexity to the conceptual model by theorizing on and testing interactions and mediations between different red tape causes. Such an approach could involve the interplay between different organizational structural characteristics and red tape drivers at the level of the individual. Indeed, the analysis of the red tape definitions provided by respondents shows great diversity in terms of what individuals perceive as red tape. This finding hints at the possibility that a large number of factors at the level of the individual such as job satisfaction, overall patience, work orientation, the extent to which the individual identifies with clients or other organizational stakeholders, organizational tenure, age, the number of hours worked, and perceptions of the qualities of coworkers also affect perceived red tape. While some of these factors have been incorporated in studies across the red tape literature, collective understanding of rules and red tape would benefit from a more comprehensive analysis of organizational structure and individual level factors that affect red tape. In addition to survey research, experimental designs could be particularly useful for this type of study (e.g., Perry 2012).

While the findings show that organizational formalization, centralization, and hierarchy all drive perceived red tape, this does not necessarily mean that less formalized, centralized, and hierarchical organizations are somehow superior. In fact, there may be compelling reasons for organizations to be structured along lines that promote important organizational goals (such as accountability, transparency, or predictability) at "the cost of" perceived red tape. Red tape perceptions, although certainly important for employee functioning and performance, are unlikely to adequately capture

these broader strategic considerations. At the same time, however, managers should be cognizant of the structural and informal elements of their organizations that may drive red tape perceptions among their employees. For example, employees may perceive overly detailed process or unnecessary restrictions on their actions to be red tape, as indicated by this study. Managers should carefully consider whether these processes and restrictions are warranted, especially because red tape has been shown to lead to resignation (Giauque et al. 2012).

These findings may spur managers to think more explicitly about the underlying reasoning for how organizations are structured, and to what extent the selected structure warrants perceived red tape. Unlike most existing theorizing about red tape, such an approach does not aim to eliminate red tape altogether but rather views red tape as one of many dimensions for managers to consider in their decision-making processes.

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