

External control and red tape:

The mediating effects of client and organizational feedback

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Abstract

Bozeman's (1993, 2000) external control model of red tape posits that organizations with higher degrees of external control will have higher levels of red tape. According to the model, this is compounded by entropy affecting the communication of rules and their results, limited discretion over rules and procedures, and non-ownership of rules. However, the model predicts that red tape will be mediated by communication from clients and within the organization. Bozeman's model is often cited in the literature, but it has not been subjected to empirical verification. This study tests the model using data from a multiple informant survey of 136 upper tier English local governments conducted in 2004 and several secondary sources. Statistical results show that external control does indeed lead to higher levels of red tape. We then test a number of organizational feedback mediators and find that client feedback does little to mediate the effects of red tape; the major factor is trust between politicians and officers. We discuss these findings and propose some changes to the model.

Given the apparent relevance of red tape to management and organization theory, the relative youth of the topic is surprising. As late as the beginning of the 1990's the empirical literature on red tape consisted of a single published paper: Bruce Buchanan's (1975) "Red Tape and the Service Ethic."¹ But starting in the late 1980's, the study of organizational red tape accelerated, so much so that it is now viewed as one of the most popular and even defining topics for empirical researchers in public management (for an intellectual history of red tape research see Bozeman and Feeney 2011).

True, red tape research was not without its intellectual antecedents. Before empirical red tape studies began to emerge, the organization research literature included a great many studies of formalization (e.g. Hall, Johnson and Haas 1967; Pugh, et al. 1968; Hall 1968)—studies typically based on analyses of the organizational structure of private firms. While there are several closely related definitions of formalization, a serviceable one provided by Pugh and colleagues (Pugh, et al. 1968, 75) is: "the extent to which rules, procedures, instructions and communications are written." If we consider the ordinary language use of the term "red tape," we see that formalization does not capture much of its meaning. Most citizens discuss red tape as a negative attribute of bureaucratic organizations which implies time delays, waste and nuisance. This is in contrast to formalization which is the number of rules in effect, some of which may be perceived as effective.

Bozeman's (2000) definition of red tape as "rules, regulations and procedures entailing a compliance burden but not achieving the objective of the organization" has been widely used in public management red tape research. The definition provides a sharp distinction from

¹ Buchanan's measure of red tape was identical to the measure that many other researchers had used as an index of formalization. It is perhaps more accurate to say that this is the first published work in the public administration literature to focus on formalization measures.

formalization inasmuch as it focuses not on the number of rules or on the extent to which they are codified but rather on rules effectiveness.

Approximately fifteen years ago a body of red tape research began to develop from Bozeman's (1993) concept, which departed sharply from the formalization focus of Buchanan (1975) and the organization structure researchers working in the sociological tradition. Since the mid-1990's, which marked the beginning of empirical research on red tape (e.g. Bozeman, Reed and Scott 1992; Rainey, Pandey and Bozeman 1995; Pandey and Bretschneider 1997), empirical studies have become increasingly common and have examined a wide range putative causes and effects of red tape (for overviews see Pandey and Scott 2002; and Bozeman and Feeney 2011). Considering only empirical studies employing red tape measures clearly separable from formalization indices, the literature has grown to more than fifty published studies, making red tape one of the most popular topics among public management researchers.

Let us hasten to add that red tape research, despite its plenitude, is not without its knowledge gaps and not inured to sundry methodological problems and theory missteps. While there has been a high degree of convergent validity concerning several important propositions (see Coursey and Pandey 2007), some ancillary topics are subject to conflicting and even confusing findings and some obvious theoretical topics have not yet been the focus of any empirical research. Moreover, the red tape literature has not been as well integrated as one might expect given that researchers have largely used common measures and methods. Distressingly, theory has tended to develop along parallel lines from research. This is not uncommon in public management research and other social science fields, but the divide seems especially prodigious in the case of red tape theory and research. There are many likely reasons for this chasm between theory and research (see Bozeman and Feeney 2011), but the one emphasized here is the

piecemeal nature of empirical research. In red tape studies, as in most areas of social science research, empirical researchers take aim at small pieces of the puzzle, hopefully putting one or two pieces in their proper place. This is understandable due to the need to use multiple methods to test theories and the difficulty of finding data suitable to test large theoretical frameworks. . . Similarly, even good social science theories often present few clues about moving from nebulous concepts to measurable constructs. Due to these factors and reliance on common data sources (chiefly the three rounds of the National Administrative Studies Project), red tape research has advanced in sudden fits, starts and bursts. For example, one study has focused on red tape and risk culture (Bozeman and Kingsley 1998), another on information technology impacts of red tape (Moon and Bretschneider 2002), and yet another on managers' alienation because of red tape (DeHart-Davis and Pandey 2005). Proceeding in this manner, research accumulates and, with care, findings will eventually converge. But it is a piecemeal process.

While our paper resembles many others in the empirical red tape genre, it is a departure in the sense that it seeks to test an entire component of red tape theory rather than one or two hypotheses derived from the theory. In seeking to do so, we are faced with the same constraints as others, chiefly data limitations, and we have sought to mitigate this constraint by bringing together multiple data sources.

The component of red tape theory that we examine has received virtually no empirical attention: Bozeman's "external control model" of red tape (Bozeman 2000, 126-131). While there are several explanatory models of red tape presented in this work, the external control model is the broadest one and is designed to apply not only to government organizations, but in any formal organization setting, public, private or non-profit. We briefly discuss the model below and position it within later developments in red tape research and theory-building.

An External Control Model of Red Tape

The external control model of red tape assumes that any organization is potentially subject to red tape because (1) all formal organizations have rules and (2) all rules are potentially subject to being subverted, altered inappropriately, implemented poorly and, of course, some rules begin as red tape (in the sense that, due to design flaws, they cannot obtain the organization's objective for the rule).

Any set of organizational rules can be viewed as having an underlying probability distribution representing the propensity for rules to become red tape. With this view, one can then consider "diagnostic indicators" for red tape. Certain characteristics of organizations and their environments tend to increase the risk of rules becoming red tape. Other characteristics reduce the propensity. To continue with the medical metaphor, there is a "good rules cholesterol" and a "bad rules cholesterol"; one is associated with the red tape malady and the other acts to protect against the malady. Generally, external control increases red tape and communications is an excellent palliative.

The external control model assumes that a primary determinant of red tape is the extent to which rules are external in origin. Externally-imposed rules provide greater opportunity for slippage. This is less a matter of geography (though the proximity of controllers may sometimes be important) than of social distances—differences in organizational culture, guiding practices and norms, and social ties among organizational members. In many ways, rules imposed from a greater distance are simply more difficult to monitor. This is one of the fundamental lessons of another body of theory relevant to organizational performance, principal-agent theory.

If the distance of controllers and the tightness of their reins is one factor, another is the characteristics of the organization's stakeholders. Organizations with large numbers of

stakeholders, and especially *diverse* stakeholders, are more prone to red tape. Diverse stakeholders ensure that the impacts of rules will differ according to stakeholder interests, and relatedly, that organizations with many stakeholders will tend to have looser control on rules and their implementation. This lack of precise control can also foster red tape.

The external control model of red tape is presented below in Figure 1. The reasoning behind the model is as follows. An organization's red tape potential (its underlying probability distribution) increases with increases in the number of organizational entities and sub-units developing rules to be implemented by the organization. There are several reasons to expect this. First, there is an increased opportunity for misapplication of rules. Second, the larger the communications loop or the dissonance within this, the greater the possibility for communications entropy. That is, distant or highly specialized parts of an organization may not communicate very well. Finally, we assume that rule ownership increases when the proximity of those promulgating the rules decreases. It follows that externally imposed rules (compared to those adopted internally) are much more likely to be misunderstood, resented and ultimately undermined.

[Figure 1 about here]

The model assumes that client feedback decreases red tape propensity and entropy increases it. As the figure implies, managers can take steps to reduce the impact of external control on red tape. The key to reducing red tape is effective communication between the organization formulating and requiring rules and the organization actually implementing them. Thus, if communication is more frequent, higher quality, and in both directions (rather than just edicts from above), the likelihood of red tape is reduced.

Methods

Model

Bozeman (2000) posits that the high levels of red tape that arise from entropy and non-ownership of rules can be mediated by feedback from clients and from within the organization to reduce red tape.² Figure 2 depicts the mediated model. To demonstrate that there is a mediation effect it would be expected that (1) the total effect of X on Y (c) must be significant, (2) the effect of X on M (a) must be significant, the effect of M on Y controlled for X (c) must be significant and the effect of X on Y controlled for M (c') must be smaller than the total effect of X on Y (t^).

[Figure 2 about here]

Unit of Analysis and Data Sources

This study is situated in the English local government sector. English local governments are politically elected bodies with a Westminster style cabinet system of political management. They are multi-purpose authorities delivering education, social services, regulatory services (such as land use planning), housing, libraries, leisure services, and welfare benefits in specific geographical areas. London boroughs, metropolitan boroughs and unitary authorities deliver all of these services in urban areas. In rural areas, a two-tier system prevails with county councils administering education and social services, and district councils providing environmental and welfare services, while some regulatory functions such as land-use planning are shared. In this two-tier system, county councils' expenditure is around three times that of district councils, given their delivery of education and social services. Authorities are multi-purpose but not all-purpose; for example, health care is provided by health authorities. Local authorities employ professional career staff and receive around two-thirds of their income and guidance on the implementation of legislation from the central government. For the purposes of this analysis we

² The data set used for this study was not specifically designed to test the model. We could not, for example, measure and examine the effect of discretion in relation to rule application.

omitted district councils so we could focus on what are typically large-scale multi-purpose organizations. The removal of district councils reduces the sample size; however an extant analysis has shown that district councils differ from upper tier authorities on a number of important measures, including budget, size and a range of management practices (Martin et al. 2003).

Data for this study are drawn from multiple sources. A survey of English local government managers provides the dependent variable and a number of independent variables. Other independent variables are taken from the UK census and manipulations thereof by government departments, the Best Value Performance Indicators (BVPI) dataset, and the LGC Elections Centre that collates and publishes detailed results of local government elections in Great Britain on an annual basis (Rallings and Thrasher 2005).

The survey was conducted electronically and pretested in 17 local authorities (and 378 respondents) (Enticott 2003). The survey was then administered to a census of the 139 unitary and upper-tier authorities. Usable responses were received from 136 authorities for a response rate of 98%. Questionnaires were delivered as Excel files attached to an email and were, therefore, self-coding. Informants had eight weeks to return the file by email, and during this period, three reminders were sent to those who had not responded. There were no statistically significant differences between the responses of the timely and late respondents.

The survey was a multiple informant survey, collecting data from informants from several levels or “echelons” in the hierarchy. Echelons are social positions that have been defined as “the level of stratum in the organization, the department or type of professional activity” (Aiken and Hage 1968, 918). This approach addresses the weakness of prior studies that have utilized elite surveys, which typically collect evidence on organizational leaders’

aspirations rather than actual organizational and managerial practices, and overlook the range of different perceptions within organizations (Bowman and Ambrosini 1997; Phillips 1981). Two echelons were identified and used in this study: corporate officers (including the chief executive officers and corporate policy officers with cross-organizational responsibility for service delivery and improvement) and service officers (chief officers who are the most senior officer with specific service delivery responsibility; and service managers who are frontline supervisory officers). Corporate and service officers were selected because research has shown that attitudes differ between hierarchical levels of organizations generally and for this dataset in particular (Aiken and Hage 1968; Brewer 2005; Walker and Brewer 2008; Walker and Enticott 2004; Walker et al. 2007). In each authority, questionnaires were provided to three corporate informants and four service officers in each service area.³ All survey questions were in the form of a seven point Likert-type scale and informants were asked to rate their authority (for corporate respondents) or service (for chief officers and service managers) on different dimensions of red tape and management. A total of 1,056 informants responded to the survey of which 196 were corporate officers and 860 service officers (48.4% and 22.7% response rates, respectively). To calculate an organizational mean, we first calculated a mean of corporate officers and a mean of service officers giving equal weight to each tier; the organizational score was then derived from these two means. This procedure maintains variations across organizations and categorical data are converted to continuous data. Furthermore, data from two tiers helps overcome the sample bias problem faced in surveying informants from one organizational level only (Bowman and Ambrosini 1997; Brewer 2006).

BVPs are collected by central government, the major external stakeholder for local

³ Seven key services were surveyed: education, social care, land-use planning, waste management, housing, library and leisure, and benefits.

authorities in England. Central government creates and abolishes individual local government units, provides around 75% of their funding, and bestows or removes service responsibilities. The BVPIs are based on common definitions and data are obtained from councils for the same time periods with uniform collection procedures. Local authorities are expected to collect and collate these data in accordance with the Chartered Institute of Public Finance and Accountancy “Best Value Accounting-Code of Practice”. The figures are then independently verified, and the Audit Commission assesses whether the management systems in place are adequate for producing accurate information.

Measures

Dependent variable. Five measures of red tape were collected in the survey. Two are global measures and three are subsystem measures targeting specific aspects of personnel and administrative red tape. In the survey, we followed Bozeman (2000) and others’ lead by defining red tape as “burdensome rules and procedures that negatively affect performance.”⁴ Immediately after reading this definition, informants were asked to agree or disagree with five statements on red tape.

The first is a global measure of internal red tape. Internal red tape refers to bureaucratic rules and routines that affect the internal operations of a public agency. Informants were asked to agree or disagree with the following statement: “the level of red tape is high in our service/authority”. The second is a global measure of external red tape that refers to bureaucratic procedures and regulations that make it difficult for citizens and other stakeholders to interact

⁴ Pandey and Kingsley’s (2000, 782) definition of red tape was also useful in designing this study: “impressions on the part of managers that formalization (in the form of burdensome rules and regulations) is detrimental to the organization.” Simply put, red tape exists when managers view formalization as burdensome and detrimental to organizational purposes (Pandey and Scott, 2002, 565).

with the agency or comply with legal mandates. We measured this construct by asking informants to agree or disagree with the following statement which was drawn from various sources (Brewer 2005; 2006; Pandey and Scott 2002): “administrative rules and procedures are open and responsive allowing stakeholders (users, businesses, government agencies, etc.) to freely interact with our service/authority.”

Two sub-system measures of personnel red tape focused on rewards and punishment. They were initially developed by Rainey (1979) to examine personnel constraints and have subsequently been adopted by red tape researchers (Pandey and Scott 2002). The measures are: “the formal pay structures and rules make it hard to reward a good manager with higher pay here” and “even if a manager is a poor performer, formal rules make it hard to remove him or her from the organization”. Finally, an administrative-based red tape measure sought to explore an organization’s ability and capacity to restructure: “reorganizing an organizational unit or department can be achieved within two or three weeks in our service/authority.”

The external global and the administrative-based red tape measures were reversed for the empirical analysis so that all five measures of red tape would tend in the same direction. An additive index of these five variables is used as the dependent variable in this analysis. The combined red tape measures offer an acceptable Cronbach’s alpha of .743.

Independent variables. In this study we use three external measures of entropy and one internal measure. The internal measure of entropy is labelled *political climate*. The measure used here is a combination of informants’ views on how dynamic the internal political context was, and is comprised of the following questions: “The internal political context the service operates in was: changing rapidly during the last financial year; uncertain during the last financial year; very complex during the last financial year”. This seeks to tap the extent to which informants

perceived change and uncertainty inside their organization, and as such taps likely communication gaps. An additive index was used in that offered a very satisfying Cronbach's alpha of .893. Higher scores on this scale indicate a more dynamic context which is hypothesized to worsen red tape because of the opportunity for misapplication of rules when an organization is experiencing turbulence and in a state of flux.

The three external measures of entropy are drawn from secondary data that capture ideas about the number and range of stakeholders and the context within which agencies work. The *social class diversity* measure is derived from the 2001 national census. The proportions of the 12 social class subgroups were squared and the sum of these squares subtracted from 10,000.⁵ The resulting measures are the equivalent of a Hehrfindahl Hirschman Index (HHI) used by economists to measure market concentration and diversity. The measure gives a proxy for 'fractionalisation' within a local authority area, with a high score on the index reflecting a high level of diversity. Population figures from the 2001 census were divided by the land area of each local authority to measure *population density*. We include this because public organizations in urban or more dense areas can benefit from economies of scale by offering multiple services from the same site (Grosskopf and Yaisawamg 1990) and more easily communicate with local residents (Aiken and Alford 1970), whereas in rural areas with spatially dispersed clients a larger range of rules and procedures will need to be implemented in order adequately ensure adequate service delivery and this will require the development of a large and potentially burdensome set of rules and procedures. High scores on this variable indicate higher population densities, but

⁵ The groups comprised 12 National Statistics Socio-Economic Classifications: large employers and higher managerial occupations, higher professional occupations, lower managerial and professional occupations, intermediate occupations, small employers and own account workers, lower supervisory and technical occupations, semi-routine occupations, routine occupations, never worked, long-term unemployed, full-time students, and non-classifiable.

given our above reasoning we expect to observe a negative regression coefficient indicating that more dense populations reduce red tape and more sparse ones accentuate it. Our final measure of entropy is the *non-employment rate*. We include non-employment, rather than just unemployment, because it includes a large number of non-working households, many of which may place a range of demands upon local government through for example the education system (for families with children) and social services for older households. This taps the notion of deprivation which is an element of management difficulty. . It is anticipated that more complex and difficult environments will create more demanding environments that are likely to generate additional red tape. This variable is taken from the Annual Local Area Labour Force Surveys (ALALFS) carried out by the Department of Work and Pensions. It provides figures of the percentage of people aged 16-74 who are employed. In this analysis we reverse this measure.

Non-ownership is operationalized with a measure of *labour vote share* in LGC Elections Centre datasets (Rallings and Thrasher 2005). Rules, regulations, and guidance on the implementation of legislation are relatively constant and uniform in England. Laws are enacted by central government. Government departments are then responsible for developing guidelines for implementation, and implementation itself is expected to be uniform across local governments. Similarly all services have an external regulator. Variation in the imposition of rules is, however, likely to be seen in alternative ways by various political parties. In the UK, the Labour Party was in power from 1997 through 2010. Labour's absolute majorities over the last decade of its rule in the House of Parliament means that local government legislation would closely mirror the Labour Party's agenda, and it is likely that political parties at the local level, and particularly those of a different political persuasion, would view centralised legislation as the implementation of someone else's rules. Moreover, local officials would be likely to feel that

they did not have any ownership of these rules.

We explore two measures of client feedback: one is managers' perceptions of the importance of users; second is a measure of consumer satisfaction. In the 2004 survey respondents were asked to agree with the following statement about the importance of users: "Most managers place the needs of users first and foremost when planning and delivering services". We label this measure *user focus*. It is anticipated that organizations that place users at their centre of operations will be working in their clients' interests, rather than the interests of political elites, professional groups or the bureaucracy. Given this, if these managers see problems associated with red tape that frustrate service delivery attempts, they will act upon this information to ensure services are not damaged by the potentially harmful effects of red tape. Alongside the assessment of user focus by managers, we include a direct measure of client feedback in our models as this again provides information to managers on the attitudes of the citizens and users. The BVPI on consumer satisfaction is collected tri-annually, based upon a random sample of local addresses drawn from the Post Office small users address file (PAF), and we use the 2003/04 data. These surveys gauge the extent to which local authorities are having a positive effect on the quality of life experienced by local residents. The survey includes an item assessing residents' satisfaction with "the way the authority runs things" as a whole (Department of the Environment, Transport and Regions 1999 110). The surveys are conducted in accordance with guidance provided by central government (Office of the Deputy Prime Minister 2003), with the ensuing returns submitted to the government department responsible for local government before the Audit Commission independently verifies them. The measure is labelled *consumer satisfaction*.

A number of organizational feedback strategies that can help reduce red tape are

measured. Organizational structures that are decentralised are argued to more rapidly absorb information from the external environment and be more responsive to changing circumstances.

In this way staff near the front lines are able to acquire information and act upon it.

Decentralization thus relates to the distribution of decision-making within organizations. The measure explores the extent to which *devolved management* has been put in place in authorities and asks respondents to evaluate the degree to which control is devolved, and specifically whether informants' believe that "control is devolved to service managers" (Hart and Banbury 1994).

Trust-based relationships are also anticipated to reduce red tape. Trust is related to positive organizational attributes such as cohesion and integration that in turn are likely to reduce the perception of red tape. Two questions on trust were posed to our respondents. The first examined relationships between senior managers and elected politicians who are the ultimate decision-makers in public organizations. The question asked respondents to react to the following statement: "There is a high level of trust between officers and politicians" (label: *trust: officers and politicians*). The second examined the relationship between more junior staff and senior managers and asked respondents to react to the following statement: "There is a high level of trust between top-management and staff" (label: *trust: top-management and staff*).

In order to ascertain if the formal communication of information in the organization was able to assist in providing feedback that would reduce the damage wreaked on an organization by red tape, two variables were included in our models. The first item examines the role of performance management. We selected performance management because it is promoted as a vital tool in the modern public agency and is argued to assist with improved decision-making by producing timely information on organizational processes and outcomes (de Lancer Julnes and

Holzer 2001; Walker and Boyne 2006). We labelled this variable *performance measurement* and asked: “There is a well developed framework of clear performance measurement and targets to drive what we do”. The second item examines the role of information technology in assisting managers to achieve organizational objectives. The question posed to informants was: “Our management information systems enable service managers to judge their progress towards meeting goals and targets” (labelled: *management information systems*). Management information systems are an essential part of performance management regimes and linked to processes of target setting in English local government (Boyne and Chen 2007).

Table 1 lists the descriptive data for our independent variables.

[Table 1 about here]

Results

Table 2 presents the results of four multiple regression models. Model 1 includes only the independent variables; that is, the measures of entropy and non-ownership of rules. Model 2 adds one of the mediators: the measures of client feedback. Model 3 completes our analysis by including the second mediator: the variables that operationalize organizational feedback. The adjusted multiple coefficient of determination (or adjusted R^2) rises from 14% in the first model to 25% in the final model. While the proportion of the variance explained is relatively low, the results do indicate that entropy (our IV) increases red tape while organizational feedback reduces it. As we move from models 1 to 2 and from 2 to 3, the adjusted R^2 rises by 3 and 8 percent respectively. A joint-F test reveals that these increases are statistically significant, and therefore warrants the inclusion of the additional stages and variables. The models are not troubled by multicollinearity: the highest variance inflation factor recorded in all three models was 1.86 -- well below the level of 10 at which it can become a concern.

[Table 2 about here]

In model 1, three variables are statistically significant (one at the lower level of 10 percent). Social class diversity ($p < .10$), non-employment and political climate all have statistically significant coefficients that are positive as hypothesised and result in higher levels of red tape in this sample of English local authorities. In model 1 population density and non-ownership of rules, as operationalized here, do not have a significant effect on red tape. Model 2 adds the first set of measures that operationalize client feedback variables, our first hypothesized mediator. Of these two measures, user focus is statistically significant and the coefficient is negative as anticipated. Model 3 adds the second set of measures that operationalize our next hypothesized mediator—organizational feedback variables. Two of these variables achieve statistical significance with the anticipated negative coefficient: devolved management ($p < .10$) and trust between officers and politicians ($p < .05$). When these measures are entered into the equation, they seem to mediate the positive effect of entropy on red tape. As a result, none of the variables entered in the earlier models retain statistical significance. In fact, social class diversity and political climate lose statistical significance, and their coefficients are reduced from .001 and .906 in the first model to 0.000 and .413 respectively in the last model. These results suggest that devolved decision-making and informal communication with politicians (or decision-makers) mitigate entropy. However, the organizational feedback variables also reduce the client feedback variables to statistical insignificance. We now go on to discuss the results of the mediation tests to corroborate these preliminary results; that is, we now test whether social class diversity and informal communication with politicians can mediate the negative impact that entropy, when measured as political climate, has on red tape.

Generally speaking, mediation can be said to occur when (1) the independent variable

significantly affects the dependent variable in the absence of the mediator (path c); (2) the independent variable significantly affects the mediator (path a); (3) the mediator has a significant unique effect on the dependent variable (path b); and (4) the effect of the independent variable on the dependent variable shrinks upon the addition of the mediator to the model (path c'). Table 3 reports the OLS coefficients for paths c, a, b and c'.

[Table 3 about here]

Estimations from path “c” show that political climate (independent variable) does affect red tape (our dependent variable) in the absence of the mediator (trust: officers and politicians). Indeed, its coefficient is positive and statistically significant at the 99% level of confidence. Therefore, step 1 has been passed. Estimations from path “a” show that political climate (IV) does affect the mediator (trust: officers and politicians) which in this model becomes the dependent variable. The coefficient on political climate is negative and statistically significant at the 99% level of confidence. As a result, step 2 has been passed. Results from paths “b” and “c” show that the mediator (trust: officers and politicians) statistically affects red tape (the dependent variable) at the 95% level of confidence. Moreover, the effect of political climate on red tape shrinks from .732 to .413. Consequently, steps 3 and 4 have passed. We ran the same steps for the second and third measures of entropy—social class diversity and nonemployment—that also showed a positive effect on red tape. However, the steps are not passed and these measures of entropy cannot be confirmed as a viable mediator. Therefore, we are left with only one potential mediator for one of our independent variables.

In order to corroborate that organizational feedback does mitigate the positive influence of entropy on red tape, four mediation tests have been suggested (Baron and Kenny 1986; Sobel 1982; Goodman 1960; MacKinnon and Dwyer 1993; MacKinnon et al. 1995; Preacher and

Hayes 2008). More formally, the Sobel-Goodman tests are statistically based methods by which mediation may be assessed. Table 4 reports the results for these tests.⁶ The mediation tests report significant z values at the 0.05 level, meaning that trust between officers and politicians (one of the measures of organizational feedback) indeed mediates the positive effect that entropy (when measured as political conflict) has on red tape. Specifically, the mediation effect of trust between officers and politicians was significant with approximately 44% of the total effect of political climate on red tape being mediated. In addition, after obtaining the bootstrapped errors and based on the 95% of confidence interval, the coefficient for the Sobel and Goodman statistical tests is different from zero (see Table 5). Finally, following MacKinnon et al. (2002), the joint significance test of the null hypothesis that the two effects comprising the intervening variable effect (political climate and trust between officers and politicians) are simultaneously equal to zero is rejected (Probability > F = 0.0011). We now go on to discuss the implications of these results for the model of external control.

Conclusions

In summary, this study has tested Bozeman's external control model of red tape using data from a multiple informant survey of 136 upper tier English local governments conducted in 2004 and several secondary data sources.. The model posits that organizations with higher degrees of external control will have higher levels of red tape. According to the model, this is compounded by entropy affecting the communication of rules and their results, limited discretion over rules and procedures, and non-ownership of rules. The model further predicts that red tape will be mediated by communication from clients and within the organization. Statistical results show that external control does indeed generate higher levels of red tape in public organizations, and

⁶ These tests are performed using the Stata command *sgmediation* and specifying the option *bootstrap*.

that feedback mediates this effect. However, a closer look shows that feedback from clients does little to mediate red tape, while informal communication within the organization is paramount.

One finding of importance is that informal rather than formal communication impacts red tape. There is much in the organizational theory literature that lends support to this finding. From a practical standpoint, we can tell policy-makers and public managers that structural reform is not the best way to reduce red tape. Rather, the most effective strategy is exploitation of the informal organization and the functioning of communication networks. That gives a different and interesting bent to the reform aspects of red tape and pushes the external theory of red tape generation into some new and previously uncharted areas.

These results suggest that feedback from clients does little to mediate the effects of red tape; yet, managers' attitudes towards clients can reduce red tape. This suggests that we should modify the communications hypotheses to emphasize that communication between administrators is key, and that encouraging public participation, while likely valuable for other reasons, is not an effective countermeasure for red tape. Chiefly, when policy-makers and public managers ponder reforms to cope with red tape, they should resist the urge to impose structural reforms or reorganize public agencies. Rather, the most effective reforms will likely be those that increase trust and improve inter-organizational communication.

This set of findings raises several questions. Does informal communication reduce red because it exposes an aspect of organizational culture that might be called "integration" or "cohesion" and the effect on red tape is only incidental? Does it reduce red tape directly because client-serving managers are more in touch (an interpretation that is consistent with the theory)? Or is the apparent reduction in red tape really related to agency function, with managers' attitudes being a proxy for professionalism, client interaction, or other? Certainly these findings

help to underpin the theory of red tape, and in the future, researchers should try to firm up that foundation by employing appropriate methodologies and data sets to answer the new questions we have posed.

The usual disclaimers apply. This study has utilized a cross-sectional research design which does not lend itself to making causal attributions. In addition, measurement of some concepts may be less complete than desirable. Finally, we have relied heavily on managers' perceptions of external control, red tape and related concepts. This raises questions about common source bias. To help counter this threat, we have drawn data from several additional sources but this does not completely alleviate our concern. Despite these limitations, this study adds to the knowledge base of public management by confirming parts of Bozeman's (2000) external control model of red tape and spotlighting some weaknesses that need to be addressed.

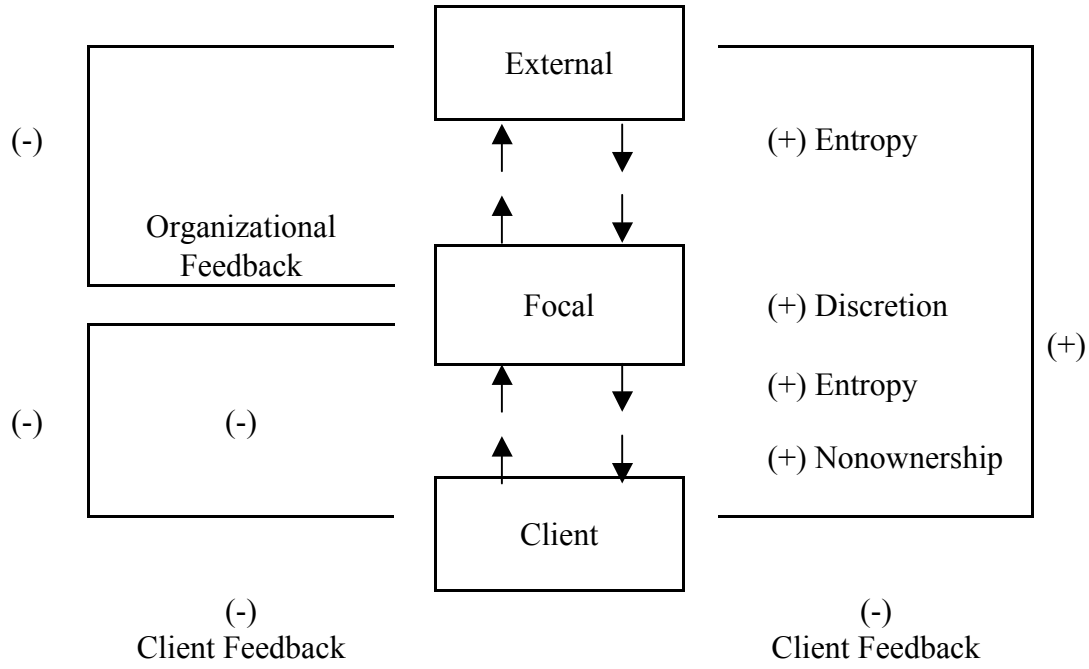
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Figure 1: External control model of red tape



Note: a plus indicates a factor facilitating the likelihood of red tape; a minus is a factor inhibiting red tape

Source: Bozeman 1993, 292.

Figure 2: External control and red tape and the mediating effect of client and organizational feedback.

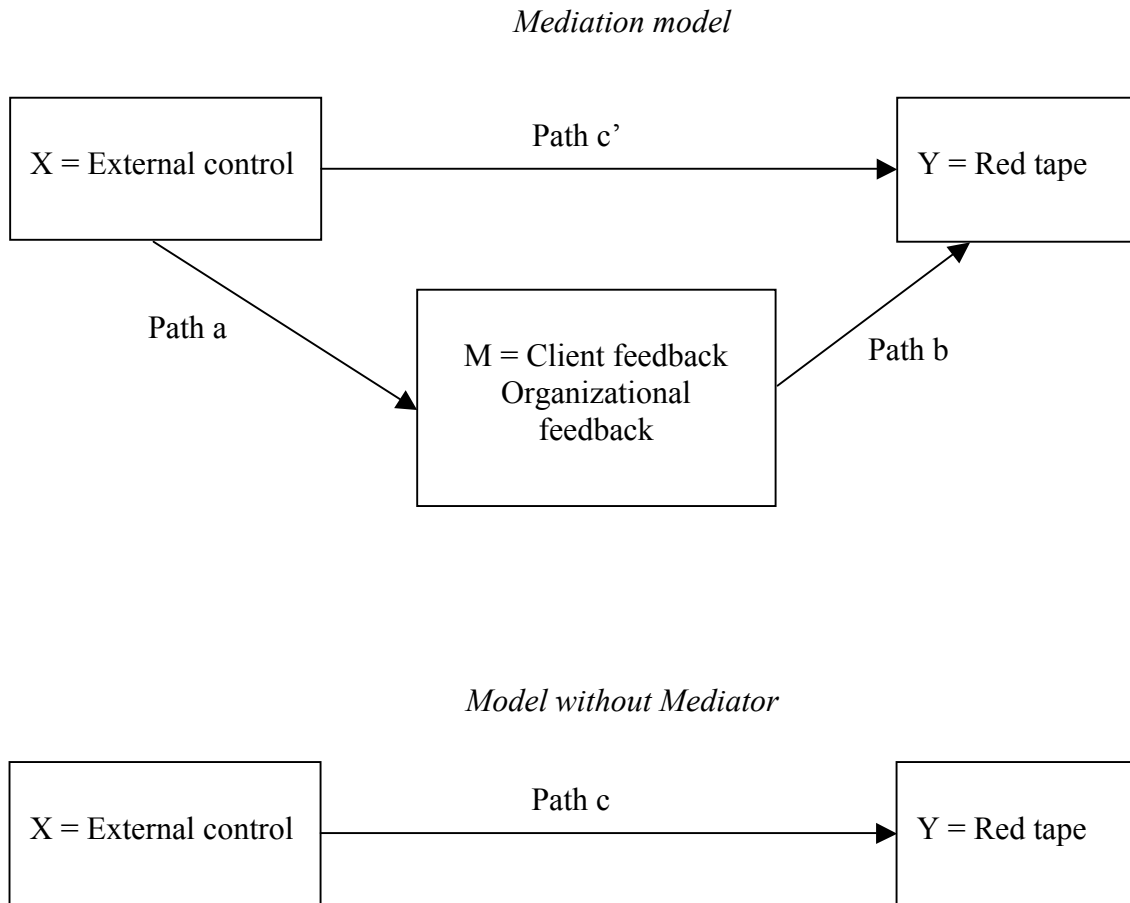


Table 1: Measures and descriptive statistics

	Mean	sd	Min	Max
<i>Entropy</i>				
Social class diversity	8044.81	387.19	7234.25	8933.46
Population density	2438.37	2711.48	61.68	14916.67
Non-employment rate	26.57	6.29	47.60	17.00
Political climate	10.88	3.07	3.89	18.73
<i>Non-ownership of rules</i>				
Labour vote share	43.14	24.89	4.44	61.70
<i>Client feedback</i>				
User focus	5.51	.55	3.50	7.00
Consumer satisfaction	52.45	8.55	31.00	77.00
<i>Organizational feedback</i>				
Devolved management	5.18	.58	3.00	6.67
Trust: officers and politicians	5.00	.82	3.00	6.40
Trust: top-management and staff	5.10	.62	2.50	6.40
Performance measurement	5.79	.58	3.73	7.00
Management information systems	5.10	.68	2.82	7.00
N = 136				

Table 2: Stepwise regression model with robust SE of the external control of red tape

	M1	M2	M3
<i>Entropy</i>			
Social class diversity	.001* (.001)	.001* (.000)	.000 (.001)
Population density	-.000 (.000)	-.000 (.000)	-.000 (.000)
Non-employment rate	.011** (.050)	.105** (.053)	.075 (.051)
Political climate	.906*** (.237)	.778*** (.262)	.413 (.302)
<i>Non-ownership of rules</i>			
Labour vote share	-.022 (.022)	-.012 (.022)	-.000 (.023)
<i>Client feedback</i>			
User focus	-	-1.137** (.520)	-.376 (.576)
Consumer satisfaction	-	.015 (.028)	.005 (.025)
<i>Organizational feedback</i>			
Devolved management	-	-	-1.018* (.582)
Trust: officers and politicians	-	-	-.963** (.429)
Trust: top-management and staff	-	-	.485 (.616)
Performance measurement	-	-	-.520 (.586)
Management information systems	-	-	.355 (.672)
Constant	10.09***	15.62***	24.11***
F	6.22***	5.56***	4.35***
R ²	17	22	32
Adjusted R ²	14	17	25
Δ Adjusted R ²	-	3	8
N	136	136	136

*p<.10, **p<.05, ***p<.001

Table 3: Mediated regression results

Dependent Variable	Path c Red Tape	Path a Trust: Officers- Politicians	Path b and c' Red Tape
<i>Independent Variables</i>			
<i>Entropy</i>			
Social class diversity	.001* (.001)	-.001 (.000)	.000 (.001)
Population density	-.000 (.000)	-.000 (.000)	-.000 (.000)
Non-employment rate	.067 (.054)	.008 (.011)	.075 (.053)
Political climate	.732*** (.243)	-.332*** (.528)	.413 (.274)
<i>Non-ownership of rules</i>			
Labour vote share	-.010 (.022)	.010 (.004)	-.000 (.022)
<i>Mediators</i>			
<i>Client feedback</i>			
User focus	-.335 (.556)	-.042 (.120)	-.376 (.546)
Consumer satisfaction	.002 (.027)	.003 (.005)	.005 (.026)
<i>Organizational feedback</i>			
Devolved management	-1.314 (.523)	.306 (.113)	-1.018* (.528)
Trust: officers and politicians	-		-.963** (.406)
Trust: top-management and staff	.180 (.553)	.316 (.119)	.485 (.558)
Performance measurement	-.950 (.547)	.445 (.118)	-.520 (.566)
Management Information System	.581 (.24)	-.234 (.092)	.355 (.427)
<i>Constant</i>	23.08***	1.06***	24.11***
F	4.47***	15.29***	4.71***
R ²	28	57	32
Adjusted R ²	22	53	25
N	136	136	136

Notes:

*p<.10, **p<.05, ***p<.001

Path c: Model with Red Tape (DV) Regressed on Political Climate (IV), other variables acting as controls**Path a:** Model with Mediator (Trust: officers and politicians) regressed on Political Climate (IV), other variables acting as controls**Path b and c':** Model with Red Tape (DV) regressed on Mediator (Trust: officers and politicians) and Political Climate (IV), other variables acting as controls

Table 4. Sobel-Goodman Mediation Tests

	Coef.	SE	p> z
Sobel test	.32	.144	0.26
Goodman-1 test	.32	.146	0.28
Goodman-2 test	.32	.143	0.24

Indirect effect: .32

Direct effect: .41

Total effect: .73

Proportion of total effect that is mediated: .44

Ratio of indirect to direct effect .77

Table 5. Percentile and Bias-correct bootstrap results for Sobel: 200 replications

	Obs. coef.	Bias	Bootstrap SE	95% CI	
Coef	.320	.004	.158	.05357	.66214 (P)
				.05874	.66394 (BC)

(P) percentile confidence interval

(BC) bias-corrected confidence interval