

Does Management *Really* Matter? Management Quality and State Environmental Performance

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One of the open questions about public management is how it shapes the outcomes of public policy. Indeed, there is a growing body of literature examining the impact of various dimensions of management on policy performance. While it seems self-evident that management is important to the performance of government and numerous studies suggest ways in which it is, many scholars still conclude that it has little systematic impact or ignore it in their assessments of policy impacts.

Despite the potential importance of management to the accomplishment of public purposes, a substantial amount of public management literature largely ignores the policy and performance consequences of management practices, focusing instead on analysis of the practices themselves and factors that affect those practices. For example, Jennings and Ewalt (2003) surveyed articles published in the *Journal of Public Administration Research and Theory* from April 2002 through July 2003. These six issues of the premier journal of empirical research on public management contained thirty-two research articles. Only two of those articles provided analyses of the impact of bureaucratic behavior, management characteristics, or administrative systems on the outcomes of public policy (O'Toole and Meier, 2003; May and Wood, 2003). *Public Administration Review* published six issues in the period from September/October 2002 through July/August 2003. Those issues contained 52 articles, only three of which (Cogburn and Schneider, 2003; Meier and Bohte, 2003; Heinrich, 2002) examine the effect of management quality or practices on governmental performance. Things are changing, however. From April 2006 through July 2006, JPART published 41 articles, 10 of which

examined the effect of management on performance. PAR, however, did not reflect the same increased attention to performance; only 4 of 80 articles published from September/October 2006 to July/August 2007 examined the impact of management on performance.

Reviewing the literature, one might get the impression that the link between management and performance is studied only in the context of education programs in Texas (e.g., Meier and O'Toole, 2001, 2002, 2003a, 2003b; Meier, et al., 2007; Hill, 2005; Pitts, 2005, Goerdel, 2006), but such a perception would be misleading. The large and growing body of work on management and performance has investigated diverse aspects of management in a wide variety of settings, both substantive and jurisdictional. Some representative examples would include Andrews, et al. (2005) analyzing the effects of representation and organizational strategy on performance in English local governments, Boyne and Chen (2007) examining the effects of performance targets on outcomes on test scores in English school districts, Bilodeau, et al. (2007) analyzing the effect of corporatization on diverse dimensions of performance of Canadian agencies, and Hill (2006) identifying the effect of casework job design on earnings and welfare receipt for clients of welfare reform programs. Indeed, Forbes and Lynn (2005) identified 193 research articles published in English that examine the impact of various aspects of governance on performance using empirical methods in non-American settings. This included 179 studies analyzing discretionary management, organization, and administration as independent variables, 26 assessing primary work and core technologies as independent variables, and 102 that employed structures of formal authority as independent variables. Of the 179 studies, 84 used measures of

consequences, outcomes, outputs, and results as dependent variables and 14 used stakeholder assessments of performance. As Boyne, Meier, O'Toole, and Walker (2005) suggest, there is no longer any doubt whether management matters, if there ever was; instead, the question is, where, when, and how?

This turn toward the study of management and performance has often focused on characteristics of specific agencies and organizations, while overlooking broader management systems. Our goal in this paper is to examine the effect of general management capacity or management quality on performance. Our basic argument is that general management systems involving the management of resources (information, financial, human, capital) and performance management should affect the quality of management within an agency and the attainment of policy goals. While some researchers argue that management capacity shapes both state policy and program outcomes, there have not been many studies that examine the question with systemic components. Indeed, given the effect of political, social, and economic forces on public programs, the often limited resources committed to public initiatives, the symbolic nature of some policies, and the often loose connection between general management systems and agency practices, it may be difficult for general management capacity or quality to have a systematic impact.

In this paper, we empirically assess whether the quality of a state's managerial systems affects the performance of its environmental programs. We employ a variety of indicators across two dimensions of performance (1) the development of innovative or stringent policies to deal with environmental problems, and (2) the effectiveness of state policies designed to abate pollution. Our results provide robust evidence that

management capacity has an impact on the development of environmental policies. The link between policy and environmental performance is less clear, but there our results suggest that management capacity does impact environmental performance through both direct and indirect routes.

Management Quality and Policy Performance

In their description of government management capacity, Ingraham and Kneeder (2000) assert that government management has typically been conceived of as a black box in many studies of governmental performance. Scholars have found it difficult to give meaning to management. They offer as a solution to this problem a model of government management performance. In that model, policy design, political commitment, and resources are translated through management capacity and implementation technology into government performance (outputs) and policy outcomes. They define management capacity as “government’s intrinsic ability to marshal, develop, direct, and control its human, physical, and information capital to support the discharge of its policy directions (Ingraham and Kneeder, 2000: 294).” They also refer to this management capacity as the government’s potential energy (the power available for an activity as a result of the arrangement of systemic components), as compared to its kinetic energy (the power exerted when the government actively functions). Capacity varies across governments and over time. Their approach to capacity is somewhat different from that of Meier, who defined bureaucratic capacity in terms of autonomy and resources (Meier, 1994: 14).

The Government Performance Project (GPP) defines management capacity in terms of the functioning of core management systems: financial management, human

resources management, information technology management, and capital management. Carried out by the Maxwell School of Syracuse University and a team of journalists, the GPP used a criteria based approach to measure management capacity in the states. For each subsystem, a set of criteria were identified. For each criterion, appropriate indicators were selected and states and localities were assessed with respect to the degree to which they met the criteria (Ingraham and Kneedler, 2000; Government Performance Project, 2003). Data for assessing management capacity were gathered via a mail survey, intensive analysis of documents, and numerous telephone interviews. Those data were used to assign a grade to each state for each dimension of management capacity, including managing for results. Thus, each state has a grade on five separate dimensions of capacity. As Ingraham and Kneedler (2000) explain, these dimensions capture important aspects of the management capacity of government, giving substance and meaning to the black box of public management studies. Jurisdictions that score high are better equipped to manage resources wisely and maximize the value the public receives for its investment in public services. As they put it, “governments with more management capacity have the ability to perform better than governments with less management capacity, all else being equal (Ingraham and Kneedler, 2000: 296).”¹

That seems logical. With higher quality management capacity in place, states should be better equipped to achieve their goals for economic development, public health, education, welfare reform, or anything else they would like to pursue. When a state is getting the most out of its financial resources, managing its human resources well, able to

¹ We should note that we take it, as do the originators of the GPP and others, that the GPP measures of management capacity are indicators of management quality. Thus, we use the terms interchangeably in this paper. When we refer to the quality of a state’s management, we are referring to its management capacity.

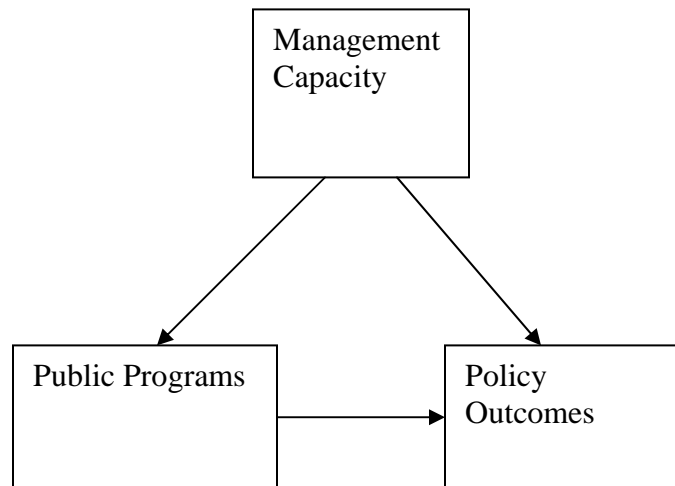
draw on its full information resources, and keeps its focus on results, it should produce better educated students, move its welfare recipients more effectively from dependency to self-sufficiency, and provide better protection from pollutants. Hou et al explain, “These generic management systems are expected to appear in virtually all large-scale administrations and act as enablers to policy implementation,” (2003: 297).

Interestingly enough, the GPP did not set itself the task of testing this link to program or policy outcomes. Nor, apparently, have others pursued it to this point. Although this measure should allow us substantial analytical leverage on the fundamental question of whether—and how—management matters, we are aware of only two studies which use the GPP measures of management capacity for this purpose. In the first, Hou et al (2003) examine whether components of the GPP financial management capacity score contribute to the effective maintenance of state rainy day funds. While this research establishes links between management capacity and performance, the authors note that they are studying an area of government performance known for restrictive rules and limited administrative and political discretion. In addition, the maintenance of state rainy day funds might simply be viewed as a dimension of financial management capacity.

In a much broader study, Cogburn and Schneider (2003) framed an analysis of the relationship between management quality and government performance. Using the GPP, they analyzed the effect of that measure of management quality on the pattern of state government spending reflected in a measure that is intended to represent the governments’ relative commitment to collective goods versus particularized benefits. Their findings suggest that states with greater management capacity tend to favor programmatic areas that distribute societal benefits widely, rather than narrowly.

This indicates an important feature of management capacity. While prior work on the effect of public management on policy tends to focus on policy outcomes, this work suggests that management may affect the content of public policy itself. Thus we hypothesize that higher quality management may lead to improved policy outcomes in two ways: directly, through better implementation of existing policy, and indirectly, through changes in policy. This theoretical relationship between management capacity, programmatic content, and policy outcomes is presented in Figure 1.

Figure 1: Hypothesized Relationship between Management Capacity, Public Policy, and Programmatic Outcomes



Hazardous Waste Policy

Our empirical test of this theory focuses on state environmental policy, specifically in the area of hazardous waste. Estimates vary, but there are somewhere between 30,000 and 425,000 existing hazardous waste sites in the United States that federal and state governments will need to address. The worst of these sites are placed on the National Priorities List and designated Superfund sites, which the federal government takes the lead on cleaning up. There are currently about 1200 Superfund sites, leaving a great number of hazardous waste sites to the states. State agencies thus play an important role in dealing with this significant environmental problem. Every state has adopted policies to deal with these sites, although there is considerable variation among these state hazardous waste programs.

Hazardous waste makes a good test of these relationships for several reasons. First, as indicated above, it is an important area of state public policy. Second, a number of prior research studies have identified a fairly consistent set of predictor variables of both policy strength and programmatic outcomes (Davis and Davis 1999, Daley and Garand 2005, Ringquist 1994; Lester et al. 1983; Sapat 2003; Abel, Kraft and Stephan 2004), making this a natural area to see what additional impact management capacity has. Finally, this is an area for which we have good data, especially on the strength of hazardous waste programs.

Data and Method

Our objective in this study is to identify the relationship between management capacity and programmatic outcomes in the area of hazardous waste policy. In order to do so we must examine two relationships. The first is the direct relationship between

management capacity and indicators of the hazardous waste pollution problem. The second is management capacity's indirect effect through the strength of the hazardous waste program. We therefore conduct three analyses. The first assesses the effects of management capacity on indicators of hazardous waste program strength, and the second analyzes the effects of management capacity and programmatic strength on measures of the hazardous waste problem via separate multivariate regression models. Our intent at this stage is to look at how robust the effects of management capacity are across a broad range of indicators of program strength and policy outcomes. We then select individual indicators and create a multiple equation causal model that integrates both the determinants of program strength and those of policy outcomes into a single path analytic model. Our intent here is to simultaneously examine both the direct and indirect effects of management capacity in hazardous waste policy to provide an overall assessment of its impact.

Measuring Hazardous Waste Policy

Our first set of models operationalizes the strength of state hazardous waste programs in three different ways. Our first indicator is a general measure of the strength of state environmental programs. This is a composite indicator of the overall strength of state environmental programs which consists of a number of different individual components that measure the green capacity of state environmental programs. Such measures have been widely used in prior state environmental literature as surrogates for state environmental program strength, especially the FREE (1987) and Green (Hall and Kerr 1991) Indices (Ringquist 1993a, 1993b, 1994, 1995; Hays, Esler, and Hays 1996; Bacot and Dawes 1997; Lowry 1992). Because these indicators had become somewhat

dated by the time the GPP surveys were conducted, we employ a later indicator of “green capacity” put out by the Resource Renewal Institute (2001). This measure consists of 85 indicators of environmental planning, management, and policy.²

Our second variable is a more direct indicator of hazardous waste program strength, a variable designed to capture the legal and fiscal resources which state environmental agencies possess to clean up hazardous wastes. This variable is based on the presence or absences of 11 characteristics within a state hazardous waste program. Components of the index include whether the state program has a designated cleanup fund, a list of hazardous waste sites, enforcement provisions, can impose legal liability on polluters and other provisions. In general, items are coded 1 if agencies possess these tools and 0 otherwise, although 2 components have partial measures. The data come from an Environmental Law Institute (1999) report on state Superfund programs, and the coding strategy follows that established by Daley and Garand (2005). States with higher scores have greater tools they can bring to bear in preventing pollution and cleaning up hazardous waste sites.

The above variables largely capture programmatic resources which are granted to state EPAs through legislation. In addition, these agencies themselves may create innovative programs designed to deal with hazardous waste. In order to capture this more internal policy dimension, we create a third measure, which is an index of bureaucratic policy innovation. This is a simple additive index of the number of proposals the agency has made to the Council of State Governments for its Innovations Transfer Program from 2000 to 2005. These data were compiled from responses from all

² The original measure also had an indicator of “governance” which included GPP scores as a component. We recalculated the scores with this indicator omitted.

50 states to an annual survey administered by the Council of State Governments. This methodology follows that employed by Sapat (2004) in her study of bureaucratic policy innovation in hazardous waste.³

Determinants of Environmental Policy

A well-developed body of research seeks to explain why some states adopt relatively pro-environment policies (e.g., Lowry 1992; Ringquist 1993b, 1994; Hays, Esler, and Hays 1996; Bacot and Dawes 1997; Potoski and Woods 2002). The analytic strategy in such studies is to determine which variables most effectively account for variance in the stringency of state environmental policies. Drawing from this literature, we identify several potential explanations for environmental program strength. Indicators of each explanation are accordingly employed as control variables in the analyses below.

Greater institutional capacity to make policy is likely to lead to more effective public policies generally, and stronger environmental programs in particular (Hays, Esler, and Hays 1996; Regens and Reams 1988). The analyses therefore employ legislative professionalism to represent policymaking capacity. It is operationalized using King's (2000) indicator, which includes components measuring legislative salary, staff, and time in session. Likewise, states with greater financial resources can afford to spend more on environmental protection (Bacot and Dawes 1997; Daley and Garand 2005), so *Wealth* is included in the models. It is operationalized as 1998 personal income per capita.⁴

³ Sapat (2004) counts policy innovations specifically in the area of hazardous waste. Due to the vagueness of the descriptions in our data, it was hard to tell whether some of the policies applied to hazardous waste, moreover, because of our more limited time frame, only three states had more than one hazardous waste policy innovation. As a consequence, our measure includes all environmental policy innovation applications (range= 0 to 9), and represents the innovativeness of the state environmental bureaucracy generally.

Public opinion is another relevant facet of the state's political context. Environmental policy support has been shown to be a multidimensional concept, distinct from political liberalism generally (Guber 2003; Carman 1998; Mazmanian and Sabatier 1980) and a more pro-environment citizenry is likely to press for stronger environmental programs (Daley and Garand 2005; Hays, Esler, and Hays 1996; Bacot and Dawes 1997). Therefore the study includes public environmentalism as a policy-specific measure of state public opinion. It is calculated from the 1988-1992 NES Senate Election Study, which asked the following question: "Should federal spending on the environment be increased, decreased, or stay the same?" Individual responses are coded 1 for "decrease," 2 for "same" and 3 for "increase," and then averaged. Although the question focuses on federal rather than state environmental spending, it gives an indication of public attitudes toward environmental protection in the state.

A final important aspect of a state's political context is the interplay of organized interests. Several studies have found that environmental policy is responsive to the strength of environmental and manufacturing interests in a state (Bacot and Dawes 1997; Hays, Esler, and Hays 1996; Ringquist 1993b, 1994; Daley and Garand 2005; Hunter and Waterman 1986; Davis and Davis 1999). Indicators of environmental and manufacturing groups are thus included to measure the political strength of these interests. They are operationalized as the number of each of these organized interest groups registered to lobby in the state in 1990. Data for the number of organized groups were compiled from lobbying registration rolls by Gray and Lowery (1996). Since the density of organized interests is greater in states with larger economies (Knack 2002), these variables are standardized by gross state product.

Measuring Programmatic Outcomes

We employ two measures of hazardous waste policy outcomes: tons of hazardous waste produced per large quantity generator, and number of Superfund sites. Hazardous waste production represents ongoing emissions into the environment which should lead to future hazardous waste sites, while the number of federal Superfund sites provides a measure of the current extent of the hazardous waste problem in a state. The two variables thus represent different dimensions of the hazardous waste problem. Similar indicators of problem severity are widely employed in other hazardous waste policy studies (Ringquist 1994; Lester et al. 1983; Daley and Garand 2005; Sapat 2004; Williams and Matheny 1994; Davis and Davis 1999).

Determinants of Programmatic Outcomes

There has been some attempt to explain policy outcomes in environmental policy, although this area has received significantly less attention than the determinants of environmental policies. As with our policy determinants models, our intent is to take a slate of variables that is fairly standard to the environmental policy literature, and then add management capacity to assess what additional impact it may have. Drawing from the more general research on policy implementation, prior researchers on the effects of environmental policy have identified four important classes of variables: internal statutory factors, bureaucratic capacity and support, administrative outputs, and external environmental factors (Ringquist 1993a).

Internal statutory factors represent the strength and scope of a state's hazardous waste program. These provide the implementing agency with the technical, and legal resources which are necessary for the task of effectively regulating hazardous waste

(Mazmanian and Sabatier 1989). We operationalize these using the indicators of environmental program strength and hazardous waste program strength discussed above.

Bureaucratic capacity and support represents the political and fiscal resources available to the bureaucracy. Fiscal resources are particularly important; an underfunded agency will be a poor vehicle for effective policy implementation (Mazmanian and Sabatier 1989). We measure fiscal support by per capita state spending for hazardous and solid waste (Council of State Governments 1998). We also include our measure of bureaucratic policy innovation as a measure of administrative innovation and commitment.

Administrative outputs represent a variety of activities designed to encourage compliance with federal regulations. Inspections and enforcement actions are necessary to ensure programmatic success. Because a polluter's incentive to comply is directly related to the probability of being sanctioned for noncompliance, we expect the number of state and federal abatement actions to affect the severity of the hazardous waste pollution problem in a state.

Finally, factors external to the agency may affect programmatic success. In the case of environmental pollution, the most salient of these factors pertain to industrial production. Hazardous waste production is heavily related to industrial activity. Thus we employ a variable which represents the manufacturing gross state product in 1997 for the seven industrial categories most related to hazardous waste production.⁴

Empirical Strategy

⁴ These industries are chemicals and allied products, primary metals, petroleum and coal products, fabricated metal products, electrical equipment, transportation equipment, and paper and allied products.

In order to examine these issues more fully two multivariate models will be estimated, one for hazardous waste emissions and one for hazardous waste sites. In each case the dependent variables are measured as changes over a period of 4-6 years, enough time for policy to generate changes in programmatic outcomes and for facilities to invest in capital and process improvements that result in reductions in hazardous waste emissions.⁵ Following other studies of environmental policy outcomes, we thus treat the independent variables as initial conditions that would influence changes in the dependent variable (Ringquist 1993b, 1995; Shapiro 2005; Abel, Kraft, and Stephan 2004). Our expectation is that management capacity and our policy measures should lead to improved hazardous waste policy conditions, reflected in decreases in the amount of hazardous waste produced (reflecting more effective controls on hazardous waste emissions) and the number of hazardous waste sites (reflecting fewer new hazardous waste sites and quicker cleanup of existing sites).

Results

We estimate the models on environmental policy in the 48 continental United States; the results are presented in Table 1.⁶ The results indicate that management capacity consistently exhibits a strong relationship with various measures of policy and programmatic strength. All else equal, increases in management capacity lead to increases in the overall strength of the state environmental program, the specific fiscal and legal resources granted to the hazardous waste program, and the innovativeness of the state environmental agency.

⁵ The hazardous waste model estimates changes from 1997 to 2003, while the Superfund sites model estimates changes from 1998 to 2002. Time periods were chosen due to data considerations.

⁶ Alaska and Hawaii were omitted due to missing data for some variables.

Table 1: Effect of Management Capacity on State Environmental Policy

Independent Variable	Environmental Program Strength	Hazardous Waste Program Strength	Bureaucratic Policy Innovation
Management Capacity	1.50* (1.02)	.26* (.19)	.49*** (.15)
Wealth	1.45** (.66)	.01 (.12)	.03 (.10)
Legislative Professionalism	1.44 (2.24)	.78** (.42)	1.02*** (.33)
State Spending	.08 (.13)	-.01 (.02)	-.02 (.02)
Public Environmentalism	30.21 (25.97)	7.61* (4.88)	1.10 (3.87)
Environmental Groups	968.40 (1150)	111.99 (215.99)	248.94* (171.28)
Manufacturing Groups	-576.75 (616.94)	-710.97 (1159.55)	-135.96* (91.94)
EPA Enforcement	-.04 (.05)	.01 (.01)	-.01 (.01)
Constant	-29.68 (17.37)	1.41 (3.27)	-1.50 (2.59)
F	3.01***	2.42**	3.12***
Adj. R ²	.38	.20	.27
N	48	48	48

Note: Regression coefficient estimates, with standard errors in parentheses.

*p<.1, ** p<.05, ***p<.01; one-tailed tests

Among the other variables, wealthier states have stronger overall environmental programs, and states with more professional legislatures have greater hazardous waste program strength and bureaucratic policy innovation. States with higher levels of public environmentalism also have stronger hazardous waste programs. Interestingly, interest group politics plays an important role for bureaucratic policy innovation: greater environmental group strength leads to more environmental policy innovation by administrative agencies, while greater manufacturing group strength diminishes it.

In order to see the effects of management capacity and program strength on environmental outcomes, Table 2 presents the results of the analyses of hazardous waste production and Superfund sites. For hazardous waste production, the model fits weakly, with three variables leading to reductions in hazardous waste production, hazardous waste program strength, industrial activity, and state spending on hazardous and solid waste. For Superfund sites, the models suggest that hazardous waste program strength again causes reductions in the number of Superfund sites. Moreover, management capacity also causes reductions in the number of sites, independently of the measures of program strength. Finally, greater state hazardous waste enforcement also reduces the number of sites.

Table 2: Effect of Management Capacity and Environmental Policy on Hazardous Waste Outcomes

Independent Variables	Hazardous Waste Production	Superfund Sites
Management Capacity	-267.59 (928.56)	-.55* (.38)
Environmental Program Strength	35.61 (144.27)	-.04 (.06)
Hazardous Waste Program Strength	-1307.31* (833.07)	-.48* (.35)
Bureaucratic Policy Innovation	-303.09 (894.71)	-.22 (.37)
Industrial Activity	-.28** (.13)	.000 (.000)
EPA Enforcement	17.43 (54.51)	-.002 (.02)
State Enforcement	3.36 (7.84)	-.005* (.003)
State Spending	-153.84* (118.41)	-.06 (.05)
Constant	1456.19 (7769.16)	7.92** (3.22)
F	1.34	2.39**
Adj. R ²	.05	.19
N	48	48

Note: Regression coefficient estimates, with standard errors in parentheses.

*p<.1, ** p<.05, ***p<.01; one-tailed tests

In order to get a better idea of the direct effects of management capacity and the indirect effects through hazardous waste program strength, we integrate the determinants of policy and outcomes into a single causal model. In situations where relevant variables have both direct and indirect effects on policymaking, regression analyses can obscure

these indirect effects. A better methodological choice is to use a system of path analytic equations. This allows us to identify the direct and indirect effects of our independent variables. It also allows us to compare the relative impact of each independent variable on the dependent variable. Since our intent is to look at the direct and indirect effects of management capacity on programmatic outcomes, this requires us to integrate our models of hazardous waste policy and outcomes; path analysis provides a mechanism which allows us to do so.

The estimated relationships are presented in Figure 2. Because the primary variable of interest is management capacity, we do not go into a detailed explanation of each of the hypothesized relationships here. These relationships are drawn from causal models of environmental policy employed in previous studies, and are discussed in detail there (Ringquist 1993a, 1993b, 1994, 1995; Davis and Davis 1999; Hays, Esler, and Hays 1996). We note here, as can be seen in Figure 2, that the directions of effects are generally as expected. In particular, management capacity, hazardous waste program strength, and state enforcement reduce the number of Superfund sites.

Figure 2: Integrated Causal Model of Management Capacity, Hazardous Waste Program Strength, and Policy Outcomes

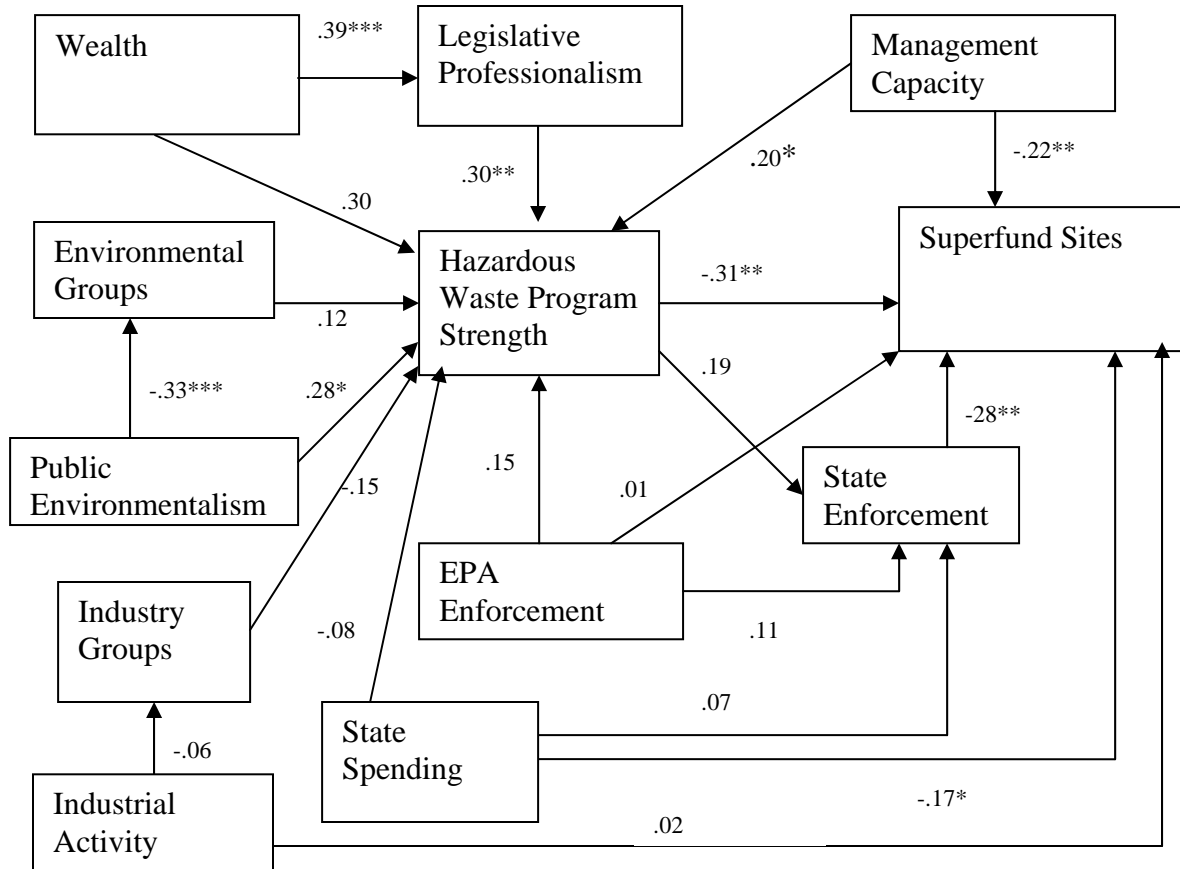


Figure 2 presents the standardized effects coefficients for each of these relationships. These standardized coefficients however, do not allow direct comparison of the influence that each independent variable has on the dependent variable. In order to determine the relative impact of each of these variables on hazardous waste policy outcomes, Table 3 presents the effects coefficients for each of the independent variables.

Table 3: Effects Coefficients

Independent Variable	Direct Effect	Indirect Effect	Total Effect
Management Capacity	-.22	-.06	-.30
Hazardous Waste Program Strength	-.31	-.05	-.36
Industrial Activity	.02	0	.02
EPA Enforcement	.01	-.03	-.02
State Enforcement	-.28	--	-.28
State Spending	-.17	-.02	-.19

The effects coefficients demonstrate that management capacity has a substantively significant impact on state Superfund sites. When the direct and indirect effects are taken into account, its overall impact is second only to the strength of the hazardous waste program. The other major variables are state enforcement and state spending for hazardous and solid waste.

Conclusion

The findings of our analysis are partially consistent with expectations about the effects of management capacity. In the hazardous waste arena, management capacity has both direct and indirect effects on policy outcomes. It directly affects the strength of state hazardous waste programs and the level of innovation in the state hazardous waste agency. It directly affects changes in the number of Superfund sites. On the other hand, we find no connection between management capacity and the generation of hazardous wastes. And, we find no effect of agency innovation, contrary to the expectations of many innovation awards programs. The conclusions then has to be that management really matters, but only in limited ways, at least as far as we can detect in this analysis. If capacity is central to the quality of governance in the states, we would expect it to have more consistent programmatic effects.

It is important to keep in mind that our assessment of management examines only a few dimensions, including management capacity of the state, program strength, and state enforcement actions. There are, of course, many dimensions of management that we ignore. We do not take into account structural arrangements in the environmental policy arena; nor are we able to look a variety of aspects of the quality of the internal management of the agencies themselves. In effect, we lack information about important aspects of capacity within the hazardous waste agency and the skill and commitment of its managers.

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