

# Hypotheses about Performance Measurement in Counties: Findings from a Survey

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## ABSTRACT

*This research examines hypotheses about the prevalence of performance measurement in counties. It focuses on organizational relationships, structures, and goals that are relevant to theories of management reform in government. Based on a national survey of counties, it finds that legislative and citizen support, the active involvement of central management, and mission orientation further the deployment of performance measurement. While ensuring that professional competency and adequate resources are associated with performance measurement, gaining external support and top management commitment are more important. This study also examines the importance of decentralized decision-making structures and efforts to make government more entrepreneurial.*

Governments in the United States have a long history of reporting performance indicators (General Accounting Office [GAO] 1997a; Hatry 1978; Poister and Streib 1984; 1989; 1994). Although a considerable amount of literature has recently emerged about performance measurement (Ammons 1996; Behn 1995; Broom 1995; Governmental Accounting Standards Board [GASB] 1990; GASB and National Academy of Public Administration 1997; Tracy and Jean 1993), few studies provide much theoretical analysis with empirical data about these efforts. Some studies describe the characteristics of performance measures currently in use (Poister and Streib 1999; Tigue 1994; Tigue and Strachota 1994), while others examine implementation efforts (GAO 1998; Melkers and Willoughby 1998; Kravchuk and Schack 1996; Radin 1998; Roberts 1997) and their challenges (GAO 1998; Mikesell 1995; Radin 1998; Roberts 1997). By contrast, this research focuses the impact of organizational relationships, structures, and goals on the deployment of performance measurement. It examines hypotheses that are relevant to

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the development of theory about management reform, organizational improvement, and accountability in public organizations.

The empirical data for this study are based on a national survey of performance measurement in counties with populations over fifty thousand. County governments are studied because although anecdotal evidence suggests that many counties have increased their activities in recent years, very little systematic research exists about the management capabilities of counties (Cigler 1995; Menzel 1996; Streib 1996; Svava 1993 and 1996; Marando and Reeves 1991). Performance measurement is of particular relevance to counties because of their role in inter-governmental relations and because of a growing need to provide accountability and performance information to their residents. In addition, counties are presumed to vary greatly in their professional competency, centralization of decision making, mission orientation, resource availability, and other factors that we theoretically relate to performance measurement. This study provides empirical evidence about these hypotheses.

In this study we define *deployment* as the prevalence of performance measures in county service functions. Prevalence concerns both the extent of performance measurement (e.g., in which county functions are performance measures most often, and least often, found?) and the nature of such prevalence, that is, whether performance measures include both outputs and outcomes. A caveat of this research is that it does not attempt to assess what the consequences (or outcomes) of deploying performance measurement might be. As a relatively new management practice, it is still too early to tell in many jurisdictions. However, this manuscript does provide additional information about the intended purposes of performance measurement.<sup>1</sup>

### FRAMEWORK

An important challenge to theories of management reform is to understand the conditions under which reforms are likely to occur and become institutionalized. Some theories of management reform regard external support, such as that of elected officials, as an important condition for implementation. In the case of performance measurement, two reasons are especially important. First, insofar as performance measurement is viewed as an administrative response to citizens' demand for accountability and service quality, support from elected officials and citizens legitimates and spurs this effort (Aristigueta 1997; Cope 1997; Kettl 1994). Elected officials are regarded as partners who help to identify the information that is needed and the ways in which it is disseminated. Second, external support leverages top management

<sup>1</sup>This study focuses on the deployment of performance measurement rather than on purposes of performance measurement activities or the impact of performance measurement. Frequently, research utilizes the term *use* to refer to all these phenomena. By using *deployment* rather than *use* we hope to avoid confusion. We thank an anonymous reviewer for this suggestion.

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responses to foot dragging or even opposition by lower managers and employees. Although performance measurement is often viewed as an effort to make government more entrepreneurial and businesslike, its implementation occurs in a context of bureaucratic politics that involves elected officials.

However, those who have other perspectives take issue with the importance of external support. They consider performance measurement as an internal management matter that is not much affected by external support (GAO 1997a). According to these views, elected officials rely on traditional means such as asking questions in executive sessions to monitor and evaluate government performance. Elected officials may suspect that performance measurement is deployed in order to increase the power of appointed administrators and thus is biased and unreliable (Carroll 1995; Gianakis and Stone 1997). This may be particularly true for county administrations in which partisan politics plays a more important role than in cities in policy making and implementation (Svara 1993). In addition, elected officials are not always effective in assisting managers with the challenges of bureaucratic politics, because many elected officials serve in a part-time capacity and have competing priorities. According to these theories, the role of elected officials in performance measurement varies between marginal and indifferent. To examine these divergent perspectives on the role of elected officials, this study will test the following hypothesis:

***Hypothesis 1:*** External support from elected officials and citizens furthers the deployment of performance measurement.

Various researchers also discuss leadership roles of central management agencies in the implementation of performance measurement (e.g., Radin 1998). Such agencies include budget and finance offices and the office of the county manager. These offices play an important role, because performance measurement often requires a broad and cross-department perspective of government performance. For example, measures of public safety that are relevant to citizens often require collaboration among police, public works, and corrections departments. Measuring outcomes in local economic development often requires economic development agencies as well as planning departments. Central agencies also play an important role in ensuring that performance measures reflect the interests of external stakeholders. In addition, the coordinated efforts by central management offices help ensure that all departments follow similar procedures and develop measures. At the federal level this is exemplified in the Office of Management and Budget's (OMB) activities to develop pilot

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efforts and guide agencies' strategic and annual performance planning. OMB is also responsible for preparing an annual, government-wide performance plan that presents a single coherent picture of federal performance goals (GAO 1998). Central management offices' role in furthering performance measurement may be particularly important for county governments where a large number of services need strong and effective coordination and facilitation.

However, some counterarguments exist regarding the efficacy of central management involvement. Studies suggest that agencies may ignore or downplay the guidance from central management offices (GAO 1998 and 1999b; Radin 1998). For example, one of OMB's statutory responsibilities includes linking long-term goals and objectives with annual performance goals. However, most federal agencies did not provide clear strategies that described how performance goals would be achieved. In addition, central management involvement could be seen as an intrusion and could face resistance from departments. These same dynamics may occur in county governments in which central leadership is limited as well. In order to study the role of central management in performance measurement, this study will examine the following hypothesis:

***Hypothesis 2:*** A positive association exists between central management involvement and the deployment of performance measurement.

Scholars have argued that a primary function of performance measurement is to specify and articulate broad and abstract goals and missions so that goals and missions can be evaluated (Ammons 1995; Congressional Budget Office 1993; Hatry et al. 1992; Leithe 1997). In this study, *mission orientation* is defined as activities that aid the establishment of service goals, the evaluation of progress of the missions, and the identification of service needs. Clearly, mission orientation can spur the deployment of performance measurement. However, the success in developing a mission does not always lead to the deployment of performance measurement. A thoughtful procedure is needed to define and articulate a mission and specify appropriate performance indicators to assess achievement. This procedure often requires extensive preparation in indicator development, data analysis, and evaluation. Missions/goals may be multifaceted and contradictory. Sometimes the same goal may have different meanings for different stakeholders (Levy, Meltsner, and Wildavsky 1974). Hence, to develop measures that can be accepted by all stakeholders is not always easy (GAO 1997a; 1997b; 1998; Jones and McCaffery 1997; Joyce 1993; Mascarenhas 1996;

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Salzer et al. 1997). The impact of mission orientation on the actual deployment of performance measurement is unknown. This study examines the hypothesis that mission orientation increases the deployment of performance measurement.

***Hypothesis 3:*** Governments that establish their missions increase the deployment of performance measurement.

An important component of modern productivity improvement is the effort to decentralize decision-making structures in government (Barzelay 1992; Osborne and Plastrik 1997). Public employees and their departments increase efficiency when superfluous and cumbersome administrative rules and regulations in budgeting, personnel, and procurement systems are minimized or eliminated. Yet elimination of these administrative rules and regulations requires government to create new mechanisms of accountability for their activities. Bowsher (1992) argues that banishing bureaucratic red tape and delegating greater responsibility to front-line managers stimulate public officials to use performance measurement, because performance measures provide standards of achievement. Osborne and Plastrik (1997) also believe that performance measurement can be part of an effort to provide incentives for results and achievements within the context of reform strategies such as quality improvement.

However, a theoretical counterargument is that decentralization may impede performance measurement. Decentralization grants authority to front-line managers, which could require performance measures to be narrow and specific. The demand for specific measures runs counter to the need for broad assessment that may be favored by external stakeholders. At the very least, decentralization complicates processes of performance measurement by requiring narrow and specific measures for multiple purposes. In addition, many managers may resist increased accountability when they do not view it as an incentive. To examine the relationship between the decentralization of decision-making systems and the deployment of performance measurement, the authors formulate this hypothesis:

***Hypothesis 4:*** Decentralized management systems increase the deployment of performance measurement.

A long-standing concern is that government inefficiency and unresponsiveness are the result of a monopolistic position in service delivery. Many researchers argue that agencies become more efficient and responsive when they compete with firms and other jurisdictions (Savas 1982 and 1987). Competition forces agencies to evaluate and compare performances among

competitors. Quantifiable performance indicators make such comparisons possible. For example, bidding and screening processes require agencies to calculate and compare the cost and activities of each bidder to select the best performer. By the same token, enterprising activities—renting out unused facilities, selling properties for profit, and so forth—require government to evaluate their performance. Quantifiable performance indicators make these justifications possible. To explore the relationship between competition and entrepreneurial activities and performance measurement, the researchers hypothesize:

**Hypothesis 5:** Entrepreneurial activities are positively associated with the deployment of performance measurement.

Many researchers link the failure of previous reforms to the lack of technical assistance, and also to inadequate personnel, financial, and infrastructure systems. They suggest a close link between effective implementation of management initiatives and professional competency (Honadle 1981; Nakamura and Smallwood 1980; Pressman and Wildavsky 1973; Sabatier and Mazmanian 1979, Sharkansky 1997; Van Meter and Van Horn 1975). For example, zero-based budgeting systems demanded a tremendous amount of work in developing, analyzing, and prioritizing budgetary decision alternatives every fiscal year, which was often beyond an organization's analytical and budgeting capacities (Mikesell 1995). Planning-programming-budgeting systems required agencies to meet the rigorous and difficult requirements of technical analysis for forecasting, estimating, and analyzing each alternative (Wildavsky 1997). In the performance measurement literature, scholars have argued the importance of competent personnel and adequate information infrastructures as measures of professional competence (GAO 1999a; Grizzle 1985; Lee 1997; Nyhan and Marlowe 1995; Wholey and Hatry 1992). The literature also discusses the managerial strategies and operational steps to ensure the completion of performance measurement. These strategies and steps consist of pilot projects, negotiation efforts with managers for potential impacts, and assessments of structural and human resource capabilities. These actions can articulate long-run organizational objectives and paths and sustain the momentum of performance measurement.

The logical inference is that the presence of competence furthers the presence of performance measurement, but there is no systematic study that determines the importance of professional competence to management reform. If professional competence is important, then ensuring it must become central in theories of implementation. This could be, in part, because considerable effort is required to establish it when it is absent.

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**Hypothesis 6:** Professional competence is positively associated with the deployment of performance measurement.

Adequate and consistent resources can be critical for the implementation of performance measurement. Organizations need adequate funds to hire competent employees, to develop appropriate performance indicators, to collect performance data, and to analyze performance. A continual budget allocation and adequate funding are necessary for an organization to develop a long-term, historical performance information data set. Although there is little argument in the literature about the importance of resources for productivity improvement, much of the literature has focused narrowly on the need for staff training. The argument is that inadequate training is a cause of failure. This study considers a broader measure of resources, which includes resources for data collection and analysis.

**Hypothesis 7:** The availability of resources increases the deployment of performance measurement.

## **METHODS**

### **The Survey**

During late 1998 we conducted a survey concerning the deployment of performance measurement in U.S. counties. After a pretest on a group of fifty county chief administrators, the survey was sent to the chief county administrative officers of all 856 counties with populations over fifty thousand, identified through *Counties USA, 1997*. Addressees were instructed either to complete the survey or to ensure that it was completed by a senior person who was familiar with performance measurement in that jurisdiction. Of 311 county administrators who responded to the survey, only 209 indicated the presence of performance measurement in at least one county service function. Ninety-five (45.5 percent) respondents were county managers (or chief county administrators), deputy county managers, or assistant county managers; seventy (33.5 percent) were chief finance or budget officers (finance directors or budget directors); nineteen (9.1 percent) were senior management and budget analysts; eleven (5.3 percent) were directors of organization development, directors of staff, or directors of planning; and the remaining fourteen (6.7 percent) were other high-level county officials. On average, respondents reported that they were quite familiar with the use of performance measurement in their jurisdictions. For example, among counties that deployed it for more than one year, 83.2 percent stated they were familiar or very familiar with

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the use of performance measurement in their counties' departments.

Our study addressed the deployment of performance measurement, and so counties that do not deploy performance measurement were excluded. To determine the number of such counties, we conducted a telephone survey among a random sample of counties that did not respond to the mail survey. Of these 106 randomly selected counties, thirteen indicated the use of performance measurement but did not respond to the mail survey. Therefore, we estimated that approximately sixty-seven counties  $[=(856-311)*13/106]$  deploy performance measurement but did not respond to the survey. We estimated that  $(209+67=)$  276 counties deploy performance measurement, and the response rate to our mail survey among counties that deploy performance measurement was  $(209/276=)$  75.7 percent. It follows that about  $(276/856=)$  32 percent of U.S. counties with populations over 50,000 have performance measurement efforts, compared with about 38 percent of cities (Poister and Streib 1999). Several randomly selected survey items were also included in the telephone survey in order to compare nonrespondents with the mail survey respondents. Comparison does not indicate problems of nonresponse bias. To ensure the validity of the responses, the authors also conducted follow-up telephone interviews in which we asked respondents to verify their responses through specific examples in their organizations. However, very few changes were made as the result of these phone interviews.

In order to gain insight about the deployment of performance measurement in counties, the authors also conducted twenty in-depth telephone interviews during the study. Interviewees were survey respondents who were selected based on their comments on an open-ended question in the survey instrument. All of these interviewees had made extensive comments in their returned surveys to the question, How would you describe your jurisdiction's achievements in using performance measurement to date? In these telephone conversations, the interviewees were asked questions concerning the achievement, obstacles, and challenges in the deployment of performance measurement in their counties. They were also asked to give specific examples to elaborate their points. The results of these interviews were used to further explore the findings from the mail survey. This research was limited in an important respect: Because it was a cross-sectional survey, changes in deployment of performance measurement, and the efficacy of conditions that affect it, were not observed. Also, the data were limited to counties that deploy performance measurement. Finally, this study examined only county governments, and so generalization of the findings requires caution.



## Measurement of the Variables

### *The Dependent Variables*

To measure the deployment of performance measurement in county governments, the authors first asked respondents to identify the service functions in their counties (i.e., police, fire, correction) that had adopted performance measurement. Respondents were also asked to identify the types of performance measures that included output and outcome measures. These measures are frequently part of open-system theory (Easton 1979; Katz and Kahn 1966; Thompson 1967) and have become part of a commonly accepted typology to describe the public service delivery process (Greytak, Phares, and Morley 1976; Leithe 1997). In the survey, outputs were defined as including workloads, while outcomes were defined as assessing the effectiveness and quality of public services (Tigue and Strachota 1994). To test the validity of respondents' understanding of these definitions, the authors conducted follow-up interviews in which respondents were asked to comment on different types of measures in their jurisdictions. The conversations indicated that interviewees clearly differentiate between output measures and outcome measures. For example, the chief budget director from Collier County, Florida, stated that in his county "the output measures which measure workload are currently used as a budgeting allocation tool and to justify new positions by showing where there is more manpower needed. . . . We are attempting to evolve our output measures into outcome performance measures, which concern true achievement." The county manager of Saline County, Kansas, stated that the county's use of performance measurement is "limited to outputs which basically count the workloads and units of work, rather than outcomes that measure results."

This study examines the extent that *output* and *outcomes* measures are deployed in county service functions. We focus on these two types of measures, because they have been central in recent efforts. The deployment of output measures is operationalized by calculating the number of county functions in which output measures are present. Responses were scaled from (0) to (1). One (1) indicates that all of a county's functions deploy output performance measures. For example, a county that had fourteen of the eighteen functions that were identified on the survey instrument and utilized output performance measures in six of them had a score of 0.429 (6/14). Similarly, the use of outcome measures was determined by calculating the number of functions that used these measures. Respondents were scaled from (0) to (1); (1) indicates that all of a county's functions have outcome measures. For example, in a county in which five of six

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functions include outcome measures, its score for the use of outcome measures is .83 (5/6). Reliability analysis shows that both measures have acceptable reliability; the Cronbach alpha is 0.88 for *the deployment of output measures* and 0.89 for *the deployment of outcome measures*.

### ***The Independent Variables***

Survey items were also developed to measure independent variables. To measure *external support*, respondents were asked to assess several items. On a seven-point Likert scale ranging from *strongly disagree* to *strongly agree*, they were asked to state their agreement with the following statements: Elected officials understand performance measures; elected officials support the use of performance measurement; elected officials participate in the design of performance measures; elected officials allocate funding for enhancing performance measurement; citizen advocates support the use of performance measurement. Finally, an aggregated measurement that combined the responses of all these items was developed to measure the impact of all individual items. The internal reliability measurement of this aggregated measurement (Cronbach alpha) is shown along with the findings in exhibit 2.

In measuring *central management involvement*, respondents were asked to indicate which agencies were primarily responsible for their performance measurement actions. The choices included county manager's office; Office of Management and Budget; finance office; personnel office; each individual office; and all of above. Respondents also indicated whether individual departments were required to submit their measures to central management offices, and if so, how frequent the submissions were. The choices were weekly, monthly, bi-monthly, quarterly, bi-annually, annually, and biennially. Finally, an aggregate measure was constructed to include all individual items.

To measure *mission orientation*, respondents were asked to assess organizational activities concerning identification of customer/client needs and the establishment and evaluation of organizational missions. The survey items that relate to customer needs include (on a scale of *true*, *false*, or *can't say*) whether a respondent's county collects information throughout citizens/clients/customers survey, comments, and focus groups. The survey items concerning establishment and evaluation of organizational missions include respondents' responses to these statements (on a scale of *true*, *false*, or *can't say*): We frequently discuss and modify service goals/mission. We evaluate the fulfillment of

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goals/missions with performance measures. Finally, an aggregate index that combined all these items was created.

To measure the degree of decentralization of decision making, the survey focused on budgeting, personnel, and procurement systems. The decentralization of these decision-making systems is highly recommended by the National Performance Review (Gore 1993), a premier work in the reinventing movement. In the survey, respondents were asked to answer *true*, *false*, or *can't say* to thirteen items concerning their decentralization tactics in their budgeting, personnel, and purchasing systems. Examples of these tactics are: We allow departments to move funds among line items (budgeting); we give departments flexibility in job classification and pay (personnel); and we simplified the procurement process from rigid rules to guiding principles (procurement). An aggregated measure that included these thirteen items was created.

The authors also developed items to measure the degree of entrepreneurial activities in a county government. As we discussed in the framework, the selection of the items is supported in privatization literature as well as in reinventing literature, which advocates competition and monetary gains in government. The items allowed respondents to evaluate entrepreneurship activities in their counties: We hire more private contractors; we award franchises to private organizations; we use voucher systems to eligible recipients; we sell facilities that do not make money; we generate profit from some county facilities. The items were on a scale of *true*, *false*, or *can't say*. Finally, an aggregate index was developed to include all the items to measure entrepreneurship.

To measure *professional competency* we asked respondents to assess statements that reflect the skills of both employees and managers to use performance measurement, as well as processes and resources that organizations use to further the deployment of performance measurement. The following statement is consistent with discussion of this hypothesis in the framework section: Most departments in our jurisdiction have staff capable of analyzing performance data. Statements were also included that reflected preparatory actions such as asking managers to develop pilot projects for performance measurement, and assessing managers' abilities to understand, develop, and implement performance measures. Finally, *resources* in performance measurement funding were measured. Respondents were asked to evaluate the financial support they receive in performance measurement. An example: Most departments in our jurisdiction allocate sufficient

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funding for data collection. These items were rated on a scale of *true, false, or can't say*.

### FINDINGS

#### Descriptive Analysis

The deployment of performance measurement varied across county functions. Among counties that have the following functions, output measures were most commonly found in solid waste management functions (76 percent of these functions had performance measures) and least commonly found in education (35 percent). Outcomes were most frequent in street maintenance (61 percent) and least common in hospital management (33 percent). On average, county governments deployed 8.2 output measures (standard deviation = 4.9) and 7.0 outcome measures (standard deviation = 4.9) in the eighteen county functions listed in the survey.<sup>2</sup> Larger counties adopted output and outcome measures more in their functions. For example, counties with populations over 250,000 used output and outcomes, respectively, in 74.1 percent and 67.0 percent of their functions. By contrast, counties with populations between 50,000 and 99,999 used output and outcomes in only 59.3 percent and 51.3 percent of their functions, respectively (counties in both size categories indicated, on average, 13.0 of 18 functions). There were few differences in the deployment of output measures by region, but outcome measurement was most prevalent in the Northeast (67.8 percent) and least prevalent in the Midwest (52.9 percent).<sup>3</sup>

Performance measures reflect specific functions and, often, local priorities. For example, stormwater management (public works) outcomes may include measures of water quality and the percent of properties located in floodplains. Output measures may include work orders completed, water quality samples collected, or site inspections completed. While measures vary greatly, performance measurement efforts often have common purposes. Respondents identified a variety of purposes, including facilitating communications among governmental stakeholders, monitoring and evaluating management practices and service operations, and allocating financial resources (Ammons 1995; CBO 1993; GASB 1990). The results are shown in exhibit 1. All 209 counties in this sample indicated that their jurisdictions used performance measurement for at least one of these purposes. For example, 80 percent of counties in the sample agreed that their jurisdictions used performance measures to monitor the efficiency and effectiveness of services, and 82 percent agreed that their counties used performance measurement to communicate between managers and commissioners. Fifty-three percent of respondents

<sup>2</sup>The following services were listed.

Numbers show the percentage of functions using output and outcome measures, respectively: personnel (70.7 percent, 57.1 percent); finance (69.0 percent, 55.0 percent); corrections (65.0 percent, 46.4 percent); parks and recreation (66.9 percent, 55.4 percent); code enforcement (75.0 percent, 55.2 percent); street maintenance (74.7 percent, 60.6 percent); animals (65.5 percent, 51.8 percent); police (68.7 percent, 50.6 percent); solid waste (76.2 percent, 56.7 percent); health (68.9 percent, 58.8 percent); economic development (51.4 percent, 47.9 percent); welfare (63.0 percent, 53.6 percent); transportation (67.6 percent, 51.5 percent); library (67.7 percent, 59.1 percent); fire (67.3 percent, 51.3 percent); housing (50.0 percent, 40.0 percent); education (35.3 percent, 33.8 percent); hospitals (40.7 percent, 33.3 percent).

<sup>3</sup>The following numbers show the percentage of functions using output and outcome measures, respectively: Northeast (65.2 percent, 67.8 percent); South (69.0 percent, 58.5 percent); Midwest (62.7 percent, 52.9 percent); West (66.1 percent, 62.0 percent); counties with populations over 250,000 (74.1 percent, 67.0 percent); counties with populations between 100,000-249,999 (65.6 percent, 56.3 percent); counties with populations between 50,000-99,999 (59.3 percent, 51.3 percent); counties with council-appointed administrator form (72.2 percent, 57.7 percent); counties with elected executive form (61.0 percent, 63.8 percent); counties with commission form (no administrator) (55.1 percent, 58.6 percent).

**Exhibit 1**  
**Performance Measurement Deployment and Purposes**

Purposes	Deployment	
	Output	Outcome
<i>Our jurisdiction uses performance measurement to</i>		
communicate among managers (57%)	0.358**	0.398**
communicate among/between managers and commission (82%)	0.328**	0.353**
communicate between public officials and residents (69%)	0.371**	0.323**
<b>OVERALL COMMUNICATION</b>	0.371**	0.370**
(Cronbach $\alpha$ = 0.64)		
assess service delivery alternatives (54%)	0.393**	0.559**
force discussion about service problems and solutions (63%)	0.316**	0.367**
evaluate program results and achievement (75%)	0.236**	0.461**
monitor the efficiency/effectiveness of services (80%)	0.295**	0.461**
<b>OVERALL MONITORING AND EVALUATION</b>	0.291**	0.444**
(Cronbach $\alpha$ = 0.81)		
determine funding priorities across programs (53%)	0.234**	0.353**
determine funding levels for individual programs (58%)	0.211**	0.326**
<b>OVERALL RESOURCE ALLOCATION</b>	0.220**	0.303**
(Cronbach $\alpha$ = 0.80)		

Notes:

- a) The numbers in parentheses are percentages of respondents who agreed that their counties had the corresponding purposes for performance measurement.
- b) The measure of association, tau-c, is appropriate for two ordinal variables. Tau-c has a "proportional reduction in error" interpretation, which means that the statistics indicate the proportion by which knowing the value of one variable improves prediction of the other. The sign of tau-c indicates the direction of the relationship.

\*\*p < .01; \*p < .05

agreed that their counties used performance measurement to determine funding priorities across programs.

**Bivariate Analysis**

Exhibit 2 shows descriptive and bivariate results. While a majority of elected officials supported and understood performance measurement (68 percent and 53 percent), only 33 percent were willing to allocate funding for performance measurement. Likewise, only 31 percent participated in performance measurement. Citizen support was also limited (39 percent). These findings are different from some studies at state and municipality levels, where legislative support appears stronger (Broom 1995; Melkers and Willoughby 1998; Poister and Streib 1999). This study hypothesizes a positive association between the external support and the deployment of performance measurement

Exhibit 2

Determinants for the Deployment of Performance Measurement (PM)

Hypothesis	%	Association with Output PM	Deployment of Outcome PM <sup>a</sup>
<b>External support (H1)</b>			
Elected officials support PM	68	.207** <sup>b</sup>	.276**
Elected officials understand PM	53	.140	.237**
Elected officials participate in PM	31	.076	.190**
Elected officials allocate funding for PM	33	.150*	.284**
Citizens support PM	39	.119	.162*
Aggregate (Cronbach $\alpha = .82$ )	45 <sup>c</sup>	.157*	.276**
<b>Central management involvement (H2)</b>			
Central agencies as primary sponsors for PM	61	.208**	.141
Mandatory PM reporting to central agencies	71	.304**	.244**
Frequent reporting of PM	32 <sup>d</sup>	.200**	.133
Aggregate (Cronbach $\alpha = .78$ )	55	.268**	.199**
<b>Mission-oriented government (H3)</b>			
Establishing service missions	58	.202**	.372**
Evaluating progress of service missions	58	.301**	.445**
Identifying service needs	52	.252**	.296**
Aggregate (Cronbach $\alpha = .78$ )	56	.235**	.335**
<b>Decentralization of decision-making systems (H4)</b>			
Simplification/empowerment in budgeting	47 <sup>e</sup>	.106	.058
Simplification/empowerment in personnel	33 <sup>e</sup>	.070	.125
Simplification/empowerment in purchasing	46 <sup>e</sup>	.023	.127
Aggregate (Cronbach $\alpha = .64$ )	42	.081	.134
<b>Entrepreneurship (H5)</b>			
Hiring more private contractors	44	.044	-.044
Awarding franchises	34	.015	-.023
Using voucher systems	24	-.006	.042
Generating profits from county facilities	60	-.047	-.040
Selling unused facilities	27	-.026	-.148
Aggregate (Cronbach $\alpha = .63$ )	38	-.012	-.072
<b>Professional competency (H6)</b>			
Staff is competent in developing PM	55	.168*	.292**
Adequate information infrastructure	48	.102	.220**
Development of PM pilot projects	43	.243**	.166*
Assessments of managers' abilities for PM	59	.210**	.228**
Assessment of analytical capacities for PM	40	.067	.181**
Aggregate (Cronbach $\alpha = .79$ )	45	.163*	.249**
<b>Resources (H7)</b>			
Locating and collecting PM data at low cost	46	.181**	.228**
Sufficient funding for PM	29	.057	.175*
Budgeting for PM	26	.039	.086
Aggregate (Cronbach $\alpha = .75$ )	34	.161*	.215**

Notes:

a) The index variable deployment of output measures has a mean of .67 and standard deviation of .37; the index variable *deployment of outcome measures* has a mean of .59 and a standard deviation of .40.

b) The measure of association, tau-c, is appropriate for two ordinal variables. See exhibit 1, note b, for further details of this measure.

. . . continued

**Exhibit 2 (continued)**

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c) This percentage averages the percents of all items in a hypothesis. For example, the percent (45 percent) for external support averages elected official support (68 percent), elected official understanding (53 percent), elected official participation (31 percent), elected official funding (33 percent), and citizen support (39 percent) for performance measurement.

d) Frequent reporting is defined as reporting performance measures to central management offices at least twice a year.

e) These are the average percentages for the decentralization initiatives of decision-making systems. For example, the percentage for *simplification/flexibility in budgeting system* (47 percent) is the average of *to move funds among line items* (88 percent), *to consolidate accounts to minimize restrictions* (43 percent), *to minimize legislative restrictions such as line items and earmarks* (44 percent), and *to use savings for bonuses and other incentives* (15 percent).

\*\*p < .01; \*p < .05

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(hypothesis 1). While support is limited, it is important: the statistical results show that support from elected officials and citizens increases the presence of output performance measurement ( $\tau\text{-}c = .157, p < .05$ ) as well as outcome measures ( $\tau\text{-}c = .276, p < .01$ ). For example, among counties that report elected officials' support for performance measurement, 67 percent of service functions (such as policing, fire protection, and corrections) in these counties have outcome measures, as compared to only 41 percent of service functions in counties that lack such support. In short, the deployment of performance measurement is greatly furthered by external support.

External support appears to have stronger influence on the deployment of outcome measures than on output measures. Moreover, citizen support is not significantly associated with the presence of output measures ( $\tau\text{-}c = .119$ ). This finding may reflect the fact that outcome measures often emphasize, or include concern with, citizen interests, whereas output measures concern an agency's procedures and operational routines. Interviews show that some county administrations have made obtaining and sustaining the support of elected officials for performance measurement a priority. These administrations keep elected officials informed about the progress of performance measurement and make performance measures easy to understand. However, in many of our interviews we found limited support by elected officials.

This study examined whether the involvement of central management offices affected the deployment of performance measurement (hypothesis 2). Exhibit 2 shows that county managers' offices, offices of management and budget, and finance offices were heavily involved in performance measurement. In a majority of counties (61 percent), central management offices took primary responsibility for performance measurement.

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Seventy-one percent of counties required departments to report performance indicators to central management offices. Among these, 64 percent asked for annual reporting and 19 percent asked for quarterly reporting. On average, 87 percent of central management officers and 73 percent of department chiefs (including finance directors and personnel directors) supported performance measurement—the highest support of any stakeholders group. Interviews showed that central management offices often were the important players in performance measurement. Managers in these offices coordinated departmental efforts to develop performance measurement initiatives, prepare appropriate performance indicators, guide the procedures, and monitor the implementation of performance measurement. They were sometimes responsible for interpreting performance results, particularly performance indicators that were difficult or confusing. In addition, they were sometimes responsible for information exchange between county commissioners and department heads.

Exhibit 2 also shows that central management involvement is positively associated with deployment of performance measurement. The extent of central management involvement, measured by the aggregate central involvement index, is significantly associated with the use of output measures ( $\tau\text{-}c = .268, p < .01$ ) and outcome measures ( $\tau\text{-}c = .199, p < .01$ ). Exhibit 2 also shows that *mandatory performance measurement reporting to central agencies*, among other things, is the most important central involvement activity furthering performance measurement. For example, among counties with mandatory reporting requirements, output measures were found in 76 percent of county service functions, and outcome measures were present in 68 percent of services. By contrast, the presence of performance measurement in counties that lack this requirement was 39 percent and 34 percent.

Hypothesis 3 concerns the effect of mission orientation on the deployment of performance measurement. Performance measurement helps to articulate broad and abstract organizational goals and missions and thereby improves the quality of goal setting procedures. More than half of the counties established service goals and missions (58 percent), evaluated the fulfillment of these goals (58 percent), and surveyed the needs of their services (52 percent). Exhibit 2 shows a positive, significant association between these activities and the use of output and outcome performance measures. Performance measures were more frequent in the counties that evaluated service goals than in the counties that did not. For example, 75 percent of county service functions had output measures when they also evaluated service goals. But output measures were only used in 55 percent



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of county service functions when service goals were not evaluated. Similarly, outcome measures were used in 72 percent of county service functions among counties that evaluated service goals, but in only 39 percent of functions that did not. This result supports the performance measurement literature that performance measurement is often used when developing clear service missions and goals.

Hypothesis 4 concerns the relationship between performance measurement and decentralized decision making. This research shows that counties have made efforts to decentralize their budgeting, personnel, and purchasing systems, including allowing departments to move funds among line items (88 percent); empowering departments in hiring, promotion, and firing (75 percent); delegating authority to departments for purchasing information (67 percent); allowing departments to purchase through simplified process (64 percent); minimizing legislative restrictions such as line items and earmarks (44 percent); consolidating accounts to minimize restrictions (43 percent); simplifying the procurement process from rigid rules to guiding principles (34 percent); giving departments flexibility in job classification and pay (27 percent); and abolishing central and standard job application forms (8 percent).

However, the results do not show a relationship between decentralization and the presence of output and outcome measures: for example, delegating decision-making authority to departmental levels did not increase the deployment of performance measurement. Empowered managers in smaller units did not deploy more performance measurement. The need for accountability that occurs when abundant rules and procedures were abolished was not filled by performance measurement. These findings contradict the reinventing government literatures. The findings could mean that since decentralization and performance measurement were relatively recent in counties (on average, counties had been using performance measurement for 4.2 years), the demand for accountability due to the decentralization efforts had not yet been well established.

Hypothesis 5 concerns performance measurement and various forms of entrepreneurship. Our study found that the level of entrepreneurship activities varies in counties. While the majority of counties (60 percent) generated profits from county facilities, only 27 percent of respondents sold facilities that did not make money. Forty-four percent of jurisdictions hired private contractors, 34 percent of them awarded franchises to private organizations, and 24 percent had voucher systems. None of these activities, however, were associated with the deployment of

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performance measurement (exhibit 2). These results did not show that counties have used performance measurement as a “consequences strategy” (Osborne and Plastrik 1997) to address the results and outcomes of entrepreneurial activities. It may be that enterprising activities are better measured and evaluated in monetary terms and that performance measures, which often involve nonmonetary measures, are not proper for this assessment.

Hypothesis 6 examines the importance of professional competency. A majority of respondents (55 percent) stated that their jurisdictions had competent staff to perform performance analysis, and about half of counties had adequate information infrastructures (48 percent). Sixty-five percent of counties in the sample used at least one implementation strategy in performance measurement. Exhibit 2 shows a positive association between these professional activities and the use of performance measures, including output and outcome measures. For example, in the counties that had competent staff in performance analysis, output measures were found in 71 percent of county services, and outcome measures were present in 69 percent. Among counties that lacked competent staff, output measures were only deployed in 62 percent of services and outcome measures were found in 47 percent. This indicates that professional competence is important in implementing performance measurement.

In this study we also hypothesized a positive association between financial resources and the deployment of performance measurement (hypothesis 7). While almost half of the counties in the sample located and collected data at low cost (46 percent), less than one-third had sufficient funding for performance measurement (29 percent). The results, however, showed a positive relationship between financial resources and the use of performance measurement (exhibit 2). Performance measures were more frequently found in counties with sufficient financial resources than in the counties without sufficient financial resources. Among counties that could locate and collect data at low cost, output measures were used in 72 percent of county service functions, as compared with 60 percent of county service functions in the counties that could not allocate and collect data at low cost. Similarly, outcome measures were used in 67 percent of service functions in the counties that could locate and collect data at low cost use, but in only 48 percent of service functions in the counties that did not have this capability. Clearly, performance measurement requires financial support; the failure to provide such support may jeopardize implementation.

### Multivariate Analysis

A multivariate model was developed to examine the impact of the above seven independent variables on the deployment of output and outcome performance measures. The variables represent important determinants that affect the deployment of output and outcome performance measurement in counties. Each independent variable in the model is constructed from the multiple survey items we have discussed, which are averaged to arrive at an aggregate index whose value and measurement for internal reliability are shown in exhibit 2. For example, the independent variable *external support* consists of items such as *elected officials support performance measurement* and *citizen support performance measurement*. The aggregate index in exhibit 2 shows that on average 45 percent of respondents agreed with these items, and the variable has acceptable reliability (Cronbach alpha = 0.82). In the first regression model, the aggregate indexes of all independent variables discussed in the hypotheses are included and regressed on the presence of output performance measurement. The results of this analysis are in exhibit 3. In the second regression model, the aggregate indexes of all independent variables are regressed on the presence of outcome performance measurement. Exhibit 4 shows the regression results. This multiple analysis aids the bivariate analysis, giving a more complete picture for the use of performance measurement.

#### Exhibit 3

#### A Regression Model for the Deployment of Output Performance Measures

Independent variables	Regression Coefficient (b)	Standardized Coefficient ( $\beta$ )	t-statistic
Constant	.358		3.566**
External support (H1)	.002	.030	.385
Central involvement (H2)	.172	.382	5.197**
Mission orientation(H3)	.029	.132	1.579
Decentralization (H4)	.002	.017	.235
Entrepreneurship (H5)	-.011	-.045	-.644
Professional competencies (H6)	.008	.077	.845
Resources (H7)	-.005	-.019	-.237

N = 174  
R-square (adj) = .208  
F-probability = .000  
\*\*p < .01; \*p < .05

**Exhibit 4**

**A Regression Model for the Deployment of Outcome Performance Measures**

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Independent variables	Regression Coefficient (b)	Standardized Coefficient ( $\beta$ )	t-statistic
Constant	-.028		-.273
External support (H1)	.016	.235	3.345**
Central involvement (H2)	.041	.078	1.174
Mission orientation(H3)	.098	.382	5.043**
Decentralization (H4)	.016	.091	1.397
Entrepreneurship (H5)	-.025	-.124	-1.868
Professional competencies (H6)	.003	.029	.345
Resources (H7)	.005	.018	.249

N = 176  
R-square (adj) = .338  
F-probability = .000  
\*\*p < .01; \*p < .05

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Exhibit 3 shows that central management involvement increases the deployment of output measures. The results are also consistent with the bivariate analysis, which shows that decentralization of decision-making systems and entrepreneurship does not increase the deployment of output measures. However, external support, mission orientation, professional competency, and resource availability are not associated with the deployment of output measures in the multivariate analysis when other variables are taken into consideration. An analysis shows that external support and mission-orientation activities increase central management involvement (tau-c is .180 and .243, respectively, and significant at .01 level), suggesting that external support and mission orientation influence the deployment of output measures through central management involvement. The analysis also shows that professional competency and resource availability are positively associated with central management involvement (tau-c is .250 and .311, respectively, and significant at .01 level), suggesting that improved professional competency and resource availability are the results of central management involvement. They are, however, not the causes for deployment of output measures.

Central management involvement does not have a direct impact on the deployment of outcome measures, when controlled for other variables (exhibit 4). Instead, the results show that

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elected officials/citizen support and mission orientation significantly increase the presence of outcome measures (see exhibit 4).<sup>4</sup> This suggests that elected officials'/citizens' demands for outcome information and organizations' own mission orientation lead to the deployment of outcome-oriented performance measurement; central management may get involved by mandating the use of outcome measures, as shown in exhibit 2. Exhibit 4 also shows that professional competence and resource availability, the variables that are associated with the deployment of outcome measures in the bivariate analysis, do not appear to influence the presence of outcome measurement in the multivariate analysis. However, a bivariate analysis shows that professional competence is associated with external support ( $\tau\text{-}c = .335, p < .01$ ) and mission orientation ( $\tau\text{-}c = .473, p < .01$ ). Similarly, resources for performance measurement increase with more external support ( $\tau\text{-}c = .316, p < .01$ ) and more activities in mission orientation ( $\tau\text{-}c = .294, p < .01$ ). These results suggest that external support and mission orientation increase the deployment of outcome measures, as well as the professional competence and resource availability in performance measurement. Improved professional competence and resource availability, then, may follow external support and mission orientation rather than the reason for performance measurement. Indeed, among counties with limited external support and limited mission-orientation activities (defined as having less than two of the four identified mission-orientation activities in exhibit 2), only 27 percent of counties had component staff and 14 percent stated that they had sufficient funding. Outcome measures were used by these counties in only 31 percent of their county service functions. However, among counties that reported external support and a range of mission-orientation activities, 68 percent had component staff, 41 percent had sufficient funding, and outcome measures were used in 77 percent of service functions. Thus the level of professional competency and resource availability for performance measurement was quite limited in the absence of external support and mission orientation.

## **DISCUSSION AND CONCLUSION**

With this study we have found that the deployment of performance measurement in county governments is associated with external support from elected officials and citizens, mission-orientation activities, and central management involvement. While external support and mission orientation increase the deployment of outcome measures, central management involvement enhances the deployment of output measures. Professional competency and resource availability are also associated with the presence of performance measurement. However, the roles of

<sup>4</sup>We also substituted elected official support and citizen support for the variable external support in the regression model that examines the deployment of outcome measures (exhibit 4). Then, we find that citizen support is insignificant ( $t = .693, p = 0.489$ ), but elected officials support is significant. This may suggest that the impact of citizen support on outcome performance measurement is realized through their elected representatives.

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external support, mission-orientation activities, and top management commitment are more important. Efforts to decentralize decision-making structures and make government more entrepreneurial are not associated with the deployment of performance measurement at this time.

These findings contribute to theories of management reform that emphasize effective collaboration among internal and external stakeholders. Political support from elected officials and residents or clients is critical and should be sought at different stages of the implementation process. Such support is particularly important in implementing outcome-oriented performance measurement. The support should be more than a simple agreement or lip service about an abstract concept or a general understanding of the reform. Rather, active participation of external stakeholders provides legitimacy, direction, and support to managers as they address myriad implementation barriers to management reforms. External support is not only appropriate, it is also instrumental. The lack of substantial legislative involvement severely limit governments' ability to initiate and implement the reform. The need for external support may be especially important for counties, where the greater power of elected officials, the presence of elected line managers, and the weaker positions of appointed managers make such support even more important than in municipalities. This research suggests a need to examine, discover, and harness the incentives of elected officials and other external stakeholders in furthering managerial reforms.

Although central management offices' activities may not be the reasons for county governments to deploy outcome performance measurement, these offices do play a critical role in organizing and coordinating implementation of performance measurement. Inputs, outputs, and outcomes constitute a complete measurement system that evaluates different aspects of a public service delivery. Central offices' activities often enhance the deployment of output measures, which are often the critical links between input measures and desirable organizational outcomes. Without central offices' active involvement, performance measurement is limited at individual department or agency level, and broad organization-wide goals and objectives would not be properly measured and evaluated. In addition, elected officials and citizen demands for performance measurement might not be realized without active central management involvement. Thus, performance measurement is furthered through effective central office coordination, direction, guidance in implementation, and mandatory, frequent central reporting of performance data. In this regard, a research need exists to identify motivation and

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interests for central management offices in performance measurement.

In this study we have emphasized the importance of technical and managerial capabilities for implementing public programs and management reforms. A lack of competent staff, adequate information facilities, and detailed implementation plans endangers management reform. However, it is also necessary to consider the interaction between professionalism and external support. Clearly, professionals are often a source of managerial initiatives, but, as we have suggested, such initiatives may fail in the absence of stakeholder support that provides legitimacy and resources. Thus the presence of professional abilities does not guarantee success. There is no such thing as an internal management reform that only focuses on operational issues of public service deliveries without considering the role of stakeholders. The challenge for managers is to align the needs of professional managers and employees with the interests of external stakeholders.

Finally, it may be that in the reinventing government model, performance measurement is viewed as an incentive for public employers because it provides them with a standard of achievement in an era of responsibility and competition. But the willingness of staff to view performance measurement in this light is often another matter. This study supports the growing body of evidence that top managers play a critical role in shaping staff expectations that, in turn, provide the basis for embracing performance measurement and other management reforms. In this regard, performance measurement might be viewed as both management reform and a source of new expectations.

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