Journal of Public Administration Research and Theory Advance Access published May 9, 2011

Setting the Table: How Transformational Leadership Fosters Performance Information Use

Donald P. Moynihan*, Sanjay K. Pandey†, Bradley E. Wright‡
**University of Wisconsin-Madison; †Rutgers University-Newark; ‡University of North Carolina at Charlotte*

ABSTRACT

The article offers a theory of how leadership affects the implementation of management reforms. The central premise of this theory is that leadership can have important but easy-to-miss indirect effects on organizational factors that shape reform outcomes. To test this question, we examine how transformational leadership influences the implementation of performance reforms, using performance information use as a dependent variable. Previous research suggests that leadership can affect how performance information is used among employees but underspecifies the theoretical mechanisms by which this influence occurs. This article develops a theoretical model that proposes that transformational leaders "set the table" for performance information use via a positive but indirect effect on two mediating factors, goal clarity and organizational culture. A structural equation model using self-reported performance information use as a dependent variable provides empirical evidence consistent with our theory.

INTRODUCTION

Although leadership is frequently proposed as a key aspect of management in the public sector, we continue to debate how much it matters given the constraining environment of the public sector (Rainey 2009, 314). The inability to resolve such basic disagreements reflects the need for knowledge based on empirical tests of well-developed models in public sector settings (Trottier, Van Wart, and Wang 2008, 319; Van Wart 2003, 214).

This article takes one of the best-articulated and promising models, transformational leadership (Bass and Riggio 2006; Burns 1978; Van Wart 2003). We offer a model that suggests that much of the influence of transformational leadership is real but indirect. Leaders can "set the table" for success by shaping key mediating variables, making their overall influence easy to miss.

We test the impact of transformational leadership on a pressing challenge for public organizations: to push performance management reforms to the point where organizational actors are actually using performance data. Given the many competing factors that shape performance, it is difficult to know if performance management reform is making

Address correspondence to the author at dmoynihan@lafollette.wisc.edu.

doi:10.1093/jopart/mur024

a difference (for a notable exception, see Walker, Damanpour, and Devece 2010). Performance information use provides a tractable variable that allows researchers to estimate the behavioral impact of performance management reforms (Moynihan and Pandey 2010). This variable represents perhaps the best summary measure of the impact of results-based reforms but has been given limited attention (Moynihan et al. 2011; Van de Walle and Van Dooren 2008).

The last decades have seen governments devote unprecedented time and resources to creating performance data. If we hope that such reforms result in more purposeful goal-oriented managers, tracking the use of performance data is an essential first step. As Stivers (2008, 126) has argued, it is only in the use of performance information that performance management is truly enacted. Like the question of whether a tree falling in the forest creates a sound when no one is around, it is reasonable to ask: "If managers do not use performance data, is there such a thing as performance management?" At the federal level, the Obama Office of Management and Budget has signaled that performance information use will be a core management strategy, criticizing the failure of previous administrations on this point: "The ultimate test of an effective performance management system is whether it is used, not the number of goals and measures produced. Federal performance management efforts have not fared well on this test" (US OMB 2010, 73).

This article has two goals. First, we seek to develop a conceptual model that connects transformational leadership to performance information use. More broadly, this article sheds light on the relationship between leadership and successful reform efforts. We propose that the key influence of transformational leadership for reforms such as performance management is indirect, setting the conditions for reforms to succeed or fail. If we focus primarily on the direct influence of leadership, this may lead us to underestimate its relative importance in shaping other factors that shape organizational outcomes, such as organizational culture. Previous research has paid attention to leadership, suggesting that leadership support and involvement in performance reforms is important for such reforms to succeed. Here, we draw upon the transformational leadership literature to examine how a broader and better developed conceptualization of leadership matters to performance information use. We propose that transformational leadership fosters performance information use by increasing organizational goal clarity and fostering a supportive organizational culture.

The second goal of the article is to add to the empirical knowledge on factors that lead to performance information use. We examine how transformational leadership behaviors on the part of city managers impact the self-reported performance information use of their most senior employees, agency heads of city departments.[1] Generally studies of leadership that examine complex indirect relationships tend to come from qualitative research. Here, we use a quantitative approach—structural equation modeling—that allows us to consider if the indirect effects of leadership in the sample we study are consistent with the theory we propose. Although the data and method have limitations that prevent a perfect test of the conceptual model, the findings offer compelling empirical support.

The article proceeds as follows. First, we review previous research on the link between leadership and performance information use. We then explain the concept of transformational leadership and articulate a model that links it to performance information use via goal

1 This approach follows the recommendation of Yukl (2008, 716): "To understand how leaders can influence the performance of an organization, it is helpful to examine the influence processes and relationships among leaders at different levels and across different subunits."

clarity and culture. We next explain the data, measures, and method employed before reviewing the results. Finally, we consider the implications of the model in the conclusion.

THE LINK BETWEEN LEADERSHIP AND PERFORMANCE INFORMATION USE

Within the empirical study of performance information use, one clear finding is that "leadership matters." But there are significant gaps in understanding how leadership matters and what form of leadership matters. This article presents a conceptual model that addresses two of those gaps. First, previous research tends to focus on direct rather than indirect influences of leadership and thereby underestimates the overall influence that leaders can play. The focus on direct effects is closely tied to the second characteristic of such research, which is that the independent variable is very much defined by the dependent variable, in that leadership effects are usually modeled as leadership attitudes or actions directly related to performance management practices. Given the nascent stage of scholarship on the topic, it makes sense to first establish direct effects of leadership by modeling leadership in ways that closely reflect how leaders deal with performance reforms. But such models have not tested how more general aspects of leadership might affect performance reforms. A broader measure of leadership, such as the measure of transformational leadership employed here, would have the beneficial effect of allowing us to link research on public sector performance management with mainstream organizational behavior (Kelman 2007).

Before we consider how leadership will affect performance information use, it is worth describing how we conceptualize performance information use. There are a variety of potential ways in which performance information can be used, and any model that seeks to explain this variable should be explicit in explaining what aspect(s) of performance information use is being studied. Here, we follow the broad typology of potential uses identified by Moynihan (2009): purposeful (where data are used to alter program management or resource allocations with the goal of improving performance); passive (where actors do the minimum required to comply with performance systems without actually using data); political (where data are used to argue for the value and legitimacy of a program and to make the case for resources); and perverse (where data are used in ways at odds with actual performance, e.g. as a result of goal displacement). In this article, our theoretical model focuses on purposeful use of data, which is the particular form of use that performance reforms are intended to generate (US OMB 2010). We offer more detail on how we operationalize this conceptualization of performance information use in our discussion of measurement below.

Given the number of leadership theories that exist, there is a long list of possible ways in which leadership might affect performance information use. However, existing empirical evidence has documented certain (likely overlapping) leadership types in the context of performance information use. The first might be characterized as credible commitment (Dull 2009). Here, the leader encourages performance information use by devoting explicit and credible support for performance management reforms and processes. By committing time, resources, and symbolic reward to specific management issues, leaders communicate their importance. This is particularly important for reforms such as performance management, where managers may be suspicious that the reform is a passing fad and where there is likely to be little formal incentive to engage (Radin 2006). When leadership does not actively signal support for performance management, managers may pursue a strategy of pro-forma compliance, but little else (Moynihan 2005). Dull (2009) demonstrates that leadership

commitment to performance management fosters use among federal employees across agencies. Similarly, Melkers and Willoughby (2005) find that leadership support for performance management is significantly related to some forms of performance information use.

Another way in which leadership can foster performance information use is by creating a demand for performance (Andrews and Moynihan 2002). Here, leaders are active participants in performance management systems, using them to hold employees accountable for outcomes. For example, among North Carolina cities, Ammons and Rivenbark (2008) report that the willingness of officials to compare results with others has fostered use. Askim, Johnsen, and Christophersen (2008) also find that where senior managers and politicians participate in benchmarking processes, the data from these processes are more likely to influence decisions. An even more aggressive pursuit of performance typifies the "stat" model of performance management, where managers are expected to account for performance in a public setting before political leaders (Behn 2007). But an aggressive demand for performance might backfire, fostering defensiveness among employees. The risk is that managers perceive leaders as playing a "gotcha" game, seeking to score political points at the expense of the reputation of the manager (de Haven-Smith and Jenne 2006). This, in turn, creates an incentive for managers to treat the process as a game—and possibly game the process—rather than contribute a good-faith effort to use performance information for improvement purposes.

Other research suggests that the influence of leadership on performance information use depends in part on the role of the leader and his/her audience. Moynihan and Ingraham (2004) find that senior state executive branch officials are more likely to be influenced by gubernatorial attention to performance management, whereas agency officials will be more influenced by agency leaders. Legislative leadership in performance management seems to elicit lower reported use of performance data among state executive branch officials, who may view such involvement as a means to extend legislative control over agencies (Moynihan and Ingraham 2004). A similar finding from Bourdeaux and Chikoto (2008) shows that more professional legislatures tend to reduce performance information use among agency officials, whereas gubernatorial power tends to foster use.

Transformational Leadership

Although there seems to be sufficient empirical evidence to support the claim that "leadership matters" to performance information use, there have been scant efforts to link this evidence to broader theoretical models of leadership (for an exception, see Dull 2009). Here, we draw on perhaps the most prominent model of leadership in organizational behavior, transformational leadership (Van Wart 2003). Research on transformational leadership suggests that it is a form of leadership especially suited to fostering organizational change, such as the performance reforms we study here (Yukl 2008, 712).

Significant empirical research has both validated the existence of transformational leadership and linked it to employee satisfaction and performance (Bass and Riggio 2006; Bass et al. 2003; Trottier, Van Wart, and Wang 2008). Although Trottier, Van Wart, and Wang (2008, 319) suggest that while the application of transformational leadership to understanding public organizations has lagged its application in mainstream organization studies, research supports both the existence and effectiveness of transformational leadership in government (Dumdum, Lowe, and Avolio 2002; Lowe, Kroeck, and Sivasubramaniam 1996; Wright and Pandey 2010). Even so, Fernandez (2005, 200) notes that public management research

on transformational leadership research has been "hindered by various problems, including concepts that are difficult to operationalize, causal paths that remain unclear, and the need to assess the impact of these leadership approaches under varying situations or conditions." We seek to deal with this problem by identifying the potential ways by which a clearly defined measure of transformational leadership affects a specific type of organizational behavior.

Transformational leadership is centered on the assumption that leaders can change followers' beliefs, assumptions, and behavior by appealing to the importance of collective or organizational outcomes. Conceptually then, transformational leadership was initially distinguished from models of transactional leadership that rely on self-interest as the primary motivating factor among followers (although in practice, successful leaders have applied both transactional and transformational strategies, see Bass and Riggio 2006). A transactional model of leadership in performance information use is represented by the provision of direct exchange in return for performance. The most extreme versions of such systems in public services are often found in contract arrangements and may sometimes result in perverse forms of performance information use, as users find ways to use performance data that maximizes financial reward but runs at odds with program goals (e.g., Soss, Fording, and Schram 2011). By contrast, transformational leadership appeals to higher-order needs among followers, asking them to look beyond self-interest and focus on the needs of the organization.

Cumulatively, transformational leadership gives rise to a purposeful, committed, and innovative approach to management and outcomes. More specifically, transformational leadership is expected to shape employee behavior through three psychological processes (Bass et al. 2003, 208).[2] First, transformational leaders direct and inspire employees' effort by raising their awareness of the importance of organizational values and outcomes. This process requires leaders to create a sense of vision, mission, and purpose among employees, providing confidence and direction about the future of the organization. The appeal to broader goals activates the higher-order needs of employees, encouraging them to transcend their own self-interest for the sake of the organization and its clientele. Second, transformational leaders inspire employees as a source of idealized influence, functioning as a role model, and building employee confidence and pride in the organization. Third, transformational leaders help followers achieve the mission by intellectually stimulating them to challenge old assumptions about organizational problems and practices.

We propose that transformational leaders set the table for performance management because the three psychological processes of transformational leadership shape key conditions (improved goal clarity and a more innovative culture) that in turn shape performance information use. Purposeful performance information use is a form of behavior that, in most public organizations, fosters collective rather than individual benefits, is

2 A fourth proposed aspect of transformational leadership is individualized consideration—where the leader recognizes the different desires and needs of followers and provides opportunities that enables their growth. However, whether this factor is truly transformational has been a subject of dispute, and some recent work argues that it is better treated as a transactional factor (Avolio, Bass, and Jung 1999; Trottier, Van Wart, and Wang 2008). Other scholars, such as Podsakoff et al. (1990), have argued for even more aspects of transformational leadership, such as setting high-performance expectations. Again, a key problem with such a conceptual expansion is that it blurs the distinction with transactional approaches. Overall, then, although there might be disagreement about some of the extant aspects of transformational leadership, the factors we focus on (idealized influence, inspirational motivation, intellectual stimulation) are standard (Van Wart 2003).

difficult to maintain, and disrupts existing forms of decision-making (Moynihan and Pandey 2010). By focusing the employee toward collective outcomes rather than self-interest, and on innovation rather than continuity, transformational leadership creates a climate where employees will be more willing to endure the costs of performance information use, are more cognizant of its benefits, and are creative enough to realize those benefits. Figure 1 lays out the basic theory we propose, which is explained in greater detail below.

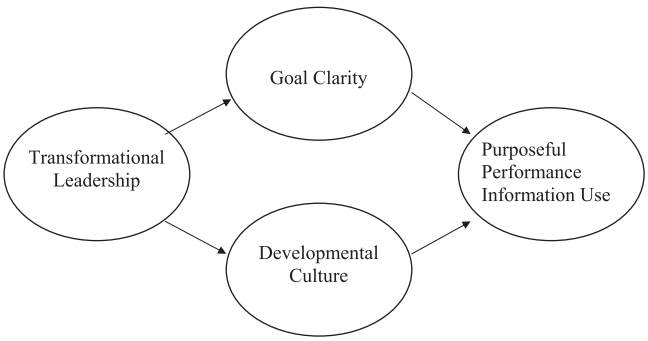
Transformational Leadership and Goal Clarity

The above description of transformational leadership suggests that a large part of the effectiveness of transformational leaders is due to their ability to articulate a clear and compelling vision for the organization. This, in turn, is likely to foster organizational goal clarity, which we propose facilitates performance information use. As organizations succeed in clarifying their goals, managers will have a better sense of which tasks are critical, their relative importance, and how they can be achieved. For such managers, task data are more likely to appear relevant as they have a better sense of how to use it.

Performance management provides a vehicle for skilled leadership but is not a substitute for it (Poister and Streib 1999). Poister and Streib (1999) argue that one of the key leadership qualities required for performance management is a capacity to develop and refine a clear sense of values, mission, and vision. Similarly, Jennings and Haist (2006) propose that goal-setting ability is one of the key leadership functions that can lead to successful performance management. Berry, Brower, and Flowers (2000) provide an example of this in their case study of performance management in Florida. They find that leaders exert influence by creating a dialogue about goals, concluding that: "Agencies' efforts to implement performance-based systems can be influenced dramatically by the ways in which agency leaders define strategic issues facing them" (Berry, Brower, and Flowers 2000, 335).

When leaders are able to clarify organizational goals and emphasize the importance of these goals, they set into motion a chain of events necessary for performance information use. The benefits of clear organizational goals cascade to the job level by eliminating distractions and focusing attention on what individual employees need to do to achieve organizational goals (Pandey and Wright 2006; Wright 2001, 2004).

Figure 1
Proposed Relationship between Transformational Leadership and Performance Information Use



Of course, setting a vision, mission, and goals is easier in some contexts than others and helps to explain why organizations with more complex functions struggle with performance management (Radin 2006). There are few government organizations that have the luxury of pursuing simple organizational goals. Indeed, several eminent scholars have argued that public organizations must, by necessity, pursue "multiple, conflicting, and vague" goals (e.g., Dahl and Lindblom 1953; Lipsky 1980; Rainey, Backoff, and Levine 1976). Pandey and Rainey (2006) test the competing influence of political, individual, and organization factors on organizational goal clarity. They find that organizational factors such as effective internal communications, task specialization, and decentralization—explain most of the variance in employees' understanding of goals. These findings are consistent with hypothesizing a role for leadership in fostering goal clarity since leaders are better able than political or individual factors to influence such organizational variables.

A key aspect of goal clarification relates to the ability of leaders to emphasize the salience of organizational goals at the expense of narrower individual or subunit goals. Colbert et al. (2008) reported that private sector CEOs with transformational leadership qualities are able to positively influence the importance senior managers attach to organizational goals. Using a mixed-methods approach, Yair and Avolio (2004) report that transformational leaders are better able to communicate strategic goals of the organization. The implication of this research, and of goal-setting theory more generally, is that even for programs with similar levels of complexity, proactive leadership efforts to clarify and communicate goals has a measurable positive effect (Latham et al. 2008; Wright 2004). Jung and Rainey (2007) make this point in the context of performance management systems, noting that managers can pursue strategies of goal clarification that result in more effective performance management systems.

We expect, therefore, that transformational leadership will foster goal clarity, which in turn will encourage performance information use. Thus:

H_1 Transformational leadership will have an indirect, positive effect on performance information use through its influence on goal clarity

Transformational Leadership and Developmental Culture

Transformational leaders exert influence by shaping the organizational culture (Rainey 2009; Sarros, Cooper, and Santora 2008). Transformational leadership can be expected to encourage a more adaptive or developmental culture by emphasizing employee innovation, problem solving, and empowerment (Bass and Riggio 2006). Developmental cultures are associated with a focus on the organization, flexibility, adaptability and readiness, growth, and resource acquisition (Quinn and Rohrbaugh 1981; Zammuto and Krakower 1991).

Transformational leadership behaviors have been hypothesized as capable of reshaping organizational cultures in ways that align these cultures with management systems (Yukl 2008, 712–3). Each of the three types of transformational behaviors described above can foster a developmental culture. First, intellectual stimulation, by its very definition, creates a climate that encourages followers to think on their own, develop new ideas, and challenge the status quo (Bass and Avolio 1990; Hater and Bass 1988). Second, through idealized influence, transformational leaders reinforce the acceptance and importance of these behaviors through their own words and actions. Third, through the provision of inspirational and motivating vision, transformational leaders help employees see connections between their values and the values of the organization. This has additional implications for our hypothesized model as it suggests that some of the influence leaders have on an organization's culture is

through their ability to clarify organizational goals (see figure 1). That said, transformational leadership not only clarifies goals but does so in ways that encourages employees to incorporate the organization's goals into their sense of identity so that they are more likely to find meaning and self-affirmation from the organization's work (Sarros, Cooper, and Santora 2008; Weiss and Piderit 1999; Wright 2007; Wright and Pandey 2011). In other words, by linking follower identities or values to those of the organization, transformational leaders increase their followers' intrinsic motivation to perform their duties (Jung, Chow, and Wu 2003; Park and Rainey 2008). Intrinsic motivation, in turn, has been found to increase creativity (Amabile et al. 1996; Shin and Zhou 2003), perhaps because such motivation helps employees overcome the fear of taking risks or challenging the status quo. Consistent with these three processes, studies have found that transformational leadership increases behavioral characteristics associated with developmental cultures, such as employee empowerment (Howell and Avolio 1993; Park and Rainey 2008), creativity, and innovation (Jung, Chow, and Wu 2003; Shin and Zhou 2003).

In considering how transformational leadership might foster innovation and performance, Sarros, Cooper, and Santora (2008, 145) state that "the inclusion of organizational culture as an intervening variable has yet to be examined comprehensively." Culture has been hypothesized as a factor that can block, welcome, or reshape performance reforms in ways consistent with organizational norms (Jennings and Haist 2006). Both qualitative and quantitative research supports this view. The most consistent finding is that a culture supportive of performance reforms (Yang and Hsieh 2006) or a mission-oriented culture (de Lancer and Holzer 2001; Moynihan and Landuyt 2009) is positively associated with the success of performance reforms. For example, the case study by Broadnax and Conway (2001)of performance management in the Social Security Administration portrays a leader actively reshaping the organizational culture via newsletters, e-mail, and other symbols but finds that perhaps the most important leadership action was simply to regularly meet with field office managers and query them on performance indicators. The reason for these meetings, according to one executive, is "You don't change culture through memos" (Broadnax and Conway 2001, 165). Other research suggests that the professional norms inherent in an organizational culture influence performance management (Schneider 2004) and that cultural attributes consistent with organizational learning are also predictive of performance information use (Moynihan 2005).

Such findings lend themselves to useful prescription—fostering performance information use demands a supportive culture—but tell us little about whether more general categories of organizational culture are related to performance information use. Here, we test the role of organizational culture using a broad and well-established measure that is not framed in the context of a dependent variable. There are a number of theoretical reasons to believe that a developmental culture is associated with performance information use. In a developmental culture, for example, the use of performance information is more integrated into management decisions as formative rather than summative feedback. This emphasis on performance information to learn and improve (rather than to reward and punish) is less threatening to employees. As a result, employees are less defensive and more honest about weaknesses as well as more open to discussing performance problems and considering alternative processes (Meyer 1991; Meyer et al. 1965; Moynihan 2005). Thus, consistent with the theory and research cited above, we hypothesize:

H_2 Transformational leadership will have an indirect, positive effect on performance information use through its influence on culture.

Controls

In order to isolate the influence of transformational leadership on performance information use, we include a number of other organizational and employee characteristics as statistical controls in our analyses. There is significant evidence that information availability fosters performance information use (Bourdeaux and Chikoto 2008; de Lancer and Holzer 2001, Moynihan and Ingraham 2004; Moynihan and Landuyt 2009; although Melkers and Willoughby (2005) offer contrary findings), and so we include this variable as a control in our model.

We also introduce a control for the type of organization that the manager works in. Some organizations have a harder time than others because their functions are more difficult to measure and, hence, have a different quality of performance data available (Radin 2006). But our model already controls for these effects via the goal clarity and information availability variables. Therefore, we examine another way that function might affect performance information use, which is the nature of the political environment faced by agencies. We group organizations into two types. Control organizations (finance/budget organizations, human resource/personnel agencies in our sample) are organizations whose clients are primarily other government agencies. External service providers are organizations that provide services to the public (public works, parks, economic development, planning, and community development). To a greater extent than control organizations, external service providers face direct oversight from political stakeholders and may be called on to use performance data to legitimate their efforts and justify resource demands (Moynihan 2008). We also control for the number of city government employees.

We control for individual factors among respondents, including gender and tenure.

Tenure could plausibly affect performance information use in contradictory ways. Experienced managers have seen a variety of reforms come and go and may see performance reforms as a passing fad (Melkers and Willoughby 2005; Moynihan and Landuyt 2009). On the other hand, managers who have a deeper knowledge of their task may be better able to make sense of performance information and better able to understand when it can be effectively used.

In addition to the controls, we also include some additional specifications that expand upon the model identified in figure 1. We assume that many of the key factors that predict information performance information use also predict information availability. Because the respondents are agency heads, and therefore able to influence information availability, we also specify a relationship between tenure and information availability. For the same reason, we specify a connection between city manager tenure and information availability. The tenure of the city manager is also specified as a predictor of their transformational leadership. The culture of the agency is likely to be associated with factors other than transformational leadership, and we assume that goal clarity and providing services to the public are such factors.

DATA

The data for this study are collected in Phase 4 of the National Administrative Studies Project (NASP-IV) using a survey administered to a nationwide sample. The theoretical population of interest for NASP-IV is comprised of senior managers in US local government jurisdictions with populations over 50,000. The sample design and construction for the NASP-IV study is aided by the International City/County Management Association

(ICMA). Based on the study criteria, ICMA compiles a list of potential respondents and the NASP-IV team used publicly available information to verify each respondent's identity and identify a working email address. These efforts result in 3,316 individuals in the study sample. At the conclusion of the study1,538 of the 3,316 responded, for a response rate of 46.4%.

In this study, we focus only on the responses of functional managers (agency heads of Finance/Budgeting, Public Works, Personnel/Human Resources, Economic Development, Parks and Recreation, Planning, and Community Development) regarding the leadership behavior of their chief administrative officer (the city manager or equivalent position). We therefore exclude the responses by the chief administrative officers, deputies, and their assistants. This reduces the number of observations to 720 responses.

Because our respondents are agency leaders, they are generally appointed to their position. But they have a professional background and significant experience that is more consistent with a career employee. The average amount of time they have been with the organization is just over 12 years, and the average time in their current position is slightly under 8 years. Just over 24% of them have a Masters in Public Administration and 33% have some other sort of graduate degree.

This distribution of functional specialization of respondents closely matches the distribution in the targeted sample. For functional managers, the mean age is 51 with an interquartile range of 9 (25th percentile being 47 and 75th percentile being 56). As expected, a sizable majority are male (66%), white (85%), highly educated (more than 56% with graduate degrees), and well compensated (65% with salaries over $100,000).

MEASURES

Wherever possible, the study variables are measured using multiple item measures that have been tested and validated in earlier studies (see Appendix). For the measure of transformational leadership, our respondents (the heads of city agencies) are not describing their own leadership qualities, but rather assessing the perceived transformational leadership of their supervisor, the city manager. This approach has the advantage of reducing upward response bias, as well as reducing the potential for endogeniety in the model (since it is unlikely that organizational variables will affect city-wide leadership).[3]

Our measure of transformational leadership is an index of five statements. Items were selected from four socialized charismatic leadership subscales developed by House (1998) that depict the three transformational dimensions (inspirational motivation, idealized

3 The data on transformational leadership are about city-level actors, whereas the other variables are at the agency level. It therefore seems reasonable to assume that the transformational leadership of city managers will shape specific agency variables but that agency variables are unlikely to shape city-level measures, for example, it is likely that City Manager leadership shapes the perceptions of goal clarity at the Parks Department, but unlikely that goal clarity in the Parks Department shapes the transformational leadership qualities of the City Manager. Among the other independent variables, there is higher likelihood of endogeneity, particularly relationships between culture and goal clarity, on one hand, and information availability on the other. We cannot disprove that information availability shapes goal clarity and organizational culture, but we can test if the basic model specified in figure 1 still holds if we drop information availability (whose primary purpose is as a control). The central results are unchanged. Transformational leadership still has a significant relationship with goal clarity and developmental culture, and the size of the coefficients are almost exactly the same. Goal clarity and developmental culture have a significant relationship with performance information use, and their coefficient size becomes larger. Thus, the inclusion of the information availability variable, and the associated risk of endogeneity, should not detract from the results reported below since its inclusion provides a more conservative estimate of the size of hypothesized effects.

influence, and intellectual stimulation) previously described. One item was taken from each of three subscales (intellectual stimulation, role modeling, and inspirational communication), and two items were selected from the vision scale because of the underlying importance transformational leadership places on organizational goals and vision. Although this five-item measure represents items from four different subscales that reflect the three dimensions of transformational leadership, a factor analysis of these items extracts only one factor that explains nearly 76% of the variance and is consistent with previous findings that suggest that the transformational dimensions may be best characterized as a single factor (Avolio, Bass, and Jung 1999).

For performance information use, there is not a history of well-developed variables and little consistency in measurement among the studies cited above. As noted previously, we are focusing on performance information use as a purposeful means to improve program outcomes via better management and resource allocation. In this study, we use two items, asking respondents if they use performance information to make decisions and if their department regularly compares actual performance with performance goals. Since the respondents are agency heads, they have an overview of their organization and, therefore, are in a relatively strong position to estimate the use of performance data by their managers. In two respects, our measurement approach is consistent with previous research. First, we rely on self-reported measures of individual and group behavior. This reflects the difficulty of directly observing actual use of performance data in a nonexperimental setting. Second, we treat performance information use as unidimensional. Indeed, previous research that reports different measures of use finds that these measures are so highly correlated that they are aggregated into a single scale (Bourdeaux and Chikoto 2008; de Lancer and Holzer 2001; Dull 2009).[4]

Table 1 provides the univariate and bivariate statistics for each of the study's measures. Reliability estimates (Cronbach's coefficient alpha) range from .81 to .94. The bivariate relationships provide evidence of the study measures' discriminant validity. In addition to a low-average bivariate correlation (.15), the largest bivariate correlation—between performance information availability and organizational goal clarity—is .65, suggesting that no measure shares much more than two-fifths of its variance with any other measure. Tests of univariate normality suggest that all nine measures are within ranges found to be acceptable for maximum likelihood estimation in structural equation modeling (Curran, West, and Finch 1996).

METHODS

One of the challenges of our model is that we propose indirect relationships between variables via mediating factors. Such relationships can be easily overlooked using standard regression techniques. We therefore apply structural equation modeling, which allows for the testing of such effects.

4 Additional support for the measurement approach employed here comes from an article (Moynihan, Pandey and Wright forthcoming) that specifically considers the latent psychometric properties of performance information use in more detail. This article proposes that broad nonspecific questions about performance information use such as those employed here reflect a latent construct of purposeful use of data, which can be empirically distinguished from other forms of use. Using a different data set and more extensive indices of performance information use we show that purposeful and political uses of performance data are empirically distinct. This article also shows that one of the items in our two-item index ("I regularly use performance information to make decisions") has the highest loading of the factor analysis for this longer index of purposeful use, suggesting that it strongly captures the purposeful latent factor that we propose characterizes the measure of performance information use in the model tested here.

Table 1
Sample Descriptive Statistics, Correlations, and Reliabilities

	Mean	SD	Scale Range	Correlations and Reliabilities								
				1	2	3	4	5	6	7	8	9
Study variables												
1. Performance Information Use	8.34	2.54	2–12	(0.88)								
2. Developmental Culture	11.61	2.38	3–15	0.40*	(0.83)							
3. Goal Clarity	10.85	2.71	3–15	0.46*	0.35*	(0.89)						
4. Transformational Leadership	19.93	4.55	5–25	0.27*	0.31*	0.62*	(0.94)					
Control Variables												
5. Information Availability	10.72	3.51	3–18	0.51*	0.34*	0.65*	0.51*	(0.81)				
6. Organization Size (Full-time equivalents in hundreds)	15.38	23.32	1–250	0.10*	0.02	0.04	0.06*	0.16*	NA			
7. Respondent Tenure	12.24	8.82	0–40	0.06	−0.02	−0.03	−0.04	0.05	−0.05	NA		
8. Respondent Gender (Female)	0.34	0.47	0–1	0.00	−0.03	−0.01	0.02	0.01	0.04	−0.04	NA	
9. City Manager Tenure	6.52	6.20	0–35	0.03	0.04	0.07*	0.11*	0.04	0.01	0.11*	−0.01	NA

*$p < .05$.

To test the study's hypotheses, a series of covariance structure analyses of the data are conducted using LISREL Version 8.71. This type of analysis consists of two parts which not only subsumes but improves on more common techniques such as confirmatory factor analysis, path analysis, and regression. In the first stage, the model performs a confirmatory factor analysis to construct the latent variables from their respective questionnaire items and assesses the validity and reliability of the study measures. In the second stage, the structural equation model subsumes conventional regression and path analysis models to test the hypothesized relationships among the latent variables.[5]

In the first stage of the analysis, the confirmatory factor analysis[6] tested the hypothesized measurement model, assuming that each item only loaded on its expected latent variable (as defined in Appendix) and that the strength of the relationships between the latent variables was consistent with each measure being empirically distinct. The results support the use of our measures, finding that the measurement model was a good fit to the data ($\chi^2(94) = 176.76$, goodness of fit index (GFI) = 0.99, comparative fit index (CFI) = 0.99, standardized root mean square residual (RMR) = 0.03, root mean square error of approximation (RMSEA) = 0.04, p-value test for close fit (CFit) = 0.99), supporting the expectation that the individual measurement items converge on their respective latent variables (lambda values ranged from 0.71 to 0.95) and that each measure represents a distinct latent variable. These results, providing evidence of convergent and discriminant validity, combined with the reliabilities reported in table 1 support our use of the study measures.

In the second stage, the structural equation model subsumes conventional regression and path analysis models to test whether the hypothesized direct and indirect relationships between the latent variables (depicted in figure 1) are consistent with the pattern of relationships found in the data. Such an analysis provides the ability to model mediating variables, estimating the effects of transformational leaders on organizational goal clarity and culture as well as the effects of organizational goal clarity and culture on performance information use (figure 1). This stage tests the hypothesized relationships by estimating the overall fit of the model as well as the individual parameter estimates. To avoid concerns that the overall model fit of the structural relationship will be driven by the fit of the measurement model (McDonald and Ho, 2002), the hypothesized relationships among study constructs are tested in a single indicator structural equation model incorporating measurement error (Hayduk, 1987). This model is tested using composite scores of the multiple item measures as single indicators of their respective latent variable. To recognize that the relationship between the observed value of each scale and the theoretical construct it is intended to measure is not perfect, the error variance for each measure is set by constraining the values associated with the measure in the theta delta or theta epsilon matrices equal to the variance of the measure multiplied by one minus the reliability (Hayduk 1987; Jöreskog and Sörbom 1992). Thus, the path from the latent variable to the measured indicator is estimated to be equal to the square root of the measure's reliability and can be interpreted as the factor loading of the observed indicator on the conceptual variable it is intended to measure.

5 This approach is recommended in analyzing mediation effects because the measurement model mitigates measurement error which can produce biased estimates, and the structural model does not estimate the required equations (see discussion below) independently (Baron and Kenny, 1986).

6 Due to the ordinal nature of the data at the item level, the confirmatory factor analysis was conducted using diagonally weighted least squares estimation.

RESULTS

The results suggest that the theoretical model accurately captures the pattern of relationships found in the data. Consistent with our hypotheses, transformational leadership has substantial direct effects on both goal clarity and developmental culture and, through these relationships, an indirect effect on both reported performance information availability and use.

The overall model fit of the hypothesized structural model is tested using fit indices recommended by Jaccard and Wan (1996). The majority of these indices suggest that the theoretical model accurately captures the pattern of relationships found in the data (CFI = 0.97, GFI = 0.99, RMSEA = 0.06, CFit = 0.25, and the standardized RMR is 0.03). Only the maximum likelihood chi-square ($\chi^2(13) = 43.16, p < .05$) is not consistent with overall model fit. The lack of fit found by the chi-square test, however, is not particularly troubling as this particular index is sensitive to sample size, with larger samples inflating the chi-square and decreasing the likelihood of achieving a good model fit (James, Mulaik, and Brett 1982). Despite the statistically significant chi-square, the results are consistent with the model in figure 1. In addition to five of the six fit indices being consistent with good model fit, the path coefficients and t tests for all four hypothesized paths (figure 1), are statistically significant ($p < .05$; figure 2) and in the predicted direction.

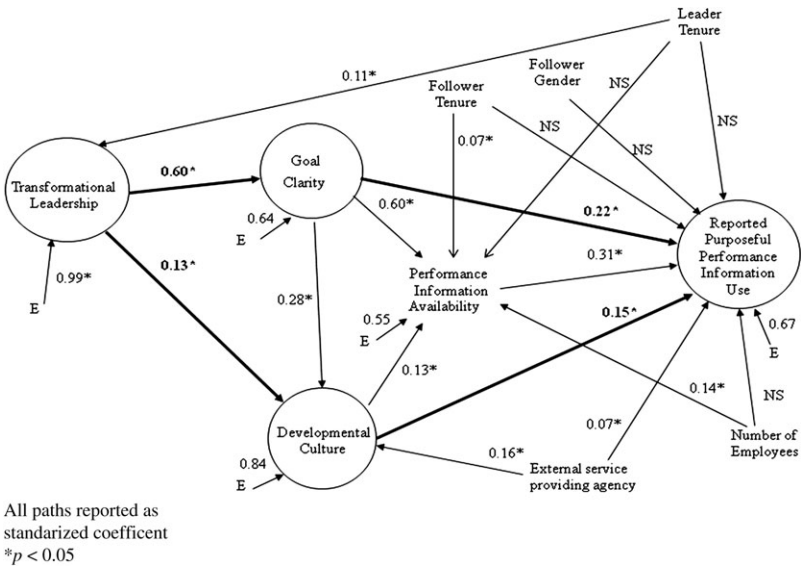
Figure 2 presents the parameter estimates for the structural model as standardized regression weights. Consistent with expectations, these findings confirm the importance of organizational goal clarity, developmental culture, and performance information availability in increasing reported performance information use. When taken together, these three variables explain 33% of the variance in reported use of performance information.[7] The findings also provide insights on the factors that shape performance information availability.

The central goal of this article is to understand the relationship between transformational leadership and performance information use. The empirical test shows a cascading effect from transformational leadership to performance information use through the mediating variables. LISREL's estimate of transformational leadership's indirect effect on performance information availability ($\beta = .40$, $t = 12.36$) and reported performance information use ($\beta = .30$, $t = 10.20$) are both statistically significant at $p < .05$. Although the empirical test of the model incorporates multiple control variables and specifications beyond the basic model identified in figure 1, it is worth noting that the primary findings hold with or without these controls and specifications.

The findings very much support the notion that transformational leadership can observe a powerful but indirect role in "setting the table" for the success of important management processes such as performance management. One possible concern is that our modeling strategy hypothesizes more complex causal paths than really exist, that is, the relationship between transformational leadership and the success of performance management is actually direct and not indirect as we propose. We test this alternative explanation via a model that posited a direct relationship between transformational leadership and performance information use. This alternative model fails to produce statistically significantly ($p > .05$) improvements in the overall model fit ($\chi_d^2(1) = 1.93$) and the path coefficient representing this direct relationship is not statistically significant ($p > .05$). These results strongly suggest

7 Coefficients of determination for endogenous variables can be calculated from figure 2 as one minus the error term for the latent variable (E).

Figure 2
Results of Structural Equation Model



that the relationship between transformational leadership and performance information use is fully mediated by goal clarity and developmental culture.

Some of the control variables prove to be significant predictors of performance information use. The finding that information availability predicts use is neither new nor surprising. But some of the other controls lack a clear empirical track record, making the results more noteworthy. Perhaps the most interesting finding has to do with the political environment that agencies face. Managers of external service providers that work directly with the public and stakeholders are more likely to use performance data than internal control agencies. We theorize that this finding suggests that agencies with external constituencies face greater pressure to legitimate their efforts and activities, and are more likely to use performance data as a means of doing so. If performance data were becoming part of the language of accountability in the public sector, it makes sense that agencies more directly in the public eye will use this data more.

Although not the central theoretical purpose of the article, the model also specifies that organizations would pursue performance measurement processes in the context of goal clarity and developmental culture. These assumptions are supported. Goal clarity and a developmental culture explains nearly half (45%) of the variance in the availability of performance information.

Limitations

In interpreting the results, it is worth noting the particular limitations that our research design entails. One clear limitation is that we focus only on purposeful use of performance data, but performance information use can take a variety of different forms that

our model or empirical results offer no insights on. It is highly possible, indeed likely, that the relationship between transformational leadership and other forms of performance information use could be insignificant or negative in the case of perverse forms of use. Another limitation is that we rely on perceptual data, and while most of our variables are previously tested and show clear discriminant validity, there remains much to be done to ascertain the validity of self-reported measures of performance information use. We also rely on data from local government in a US context. The smaller nature of local government may make it more likely that managers can directly interact with leaders and thereby be subject to the effects of transformational leadership. The closer connection between local managers and the services they provide may also alter the way in which they use performance data. The standard cautions about generalizing to other levels of government or different contexts apply, as does the usual call for more research to test the underlying theory in other settings.

Our empirical model—like all theoretically grounded analytical models—makes simplifying assumptions. Although the empirical model presented in figure 2 is complex, it may still be underspecified, omitting some critical variables or missing some important reciprocal relationships. The empirical model itself does not prove causation; instead, it merely suggests a pattern of relationships between variables consistent with the theory we have advanced. In assessing the overall contribution of the article, data and methodological limitations must be balanced against the substantive insights that emerge. Overall, the model is carefully specified, offering a compelling theoretical framework and new findings. In particular, modeling the indirect effects of leadership is significant contribution not just for the study of performance management but also of public sector leadership more generally. The implications of this insight are considered below.

CONCLUSION: SETTING THE TABLE FOR REFORM IMPLEMENTATION

This article develops a theory of the relationship between transformational leadership and purposeful performance information use, suggesting that it exerts a positive effect via two mediating factors, goal clarity and organizational culture. The empirical component of the article supports this theory.

This theory contributes in three ways to our knowledge of public sector leadership. First, the results suggest the relevance of transformational leadership for reform efforts. The findings connect transformational leadership to the successful implementation of perhaps the most widely adopted administrative reform of the last generation. The findings also suggest a broader research agenda for those interested in how leadership shapes administrative outcomes. We need a better understanding of the mechanisms by which leadership has an influence on reform, policy implementation, and other organizational outcomes. Not only could such research make use of well-developed concepts from organizational behavior, such as transformational leadership, it could also test the indirect effects of leadership. Given that leaders cannot be directly involved in all aspects of administration, it may be that these indirect effects are the only ones that leaders actually influence for many outcomes.

A second implication relates to the distinction between leading and managing that is sometimes made in discussions of leadership (Rainey 2009, 314; Van Wart 2003, 220–1). According to this distinction, leadership involves a high-level focus on strategy and

inspiring. Management, by contrast, is characterized by a focus on technical processes and systems. In this categorization, transformational leadership is real leadership, but management is not. Some have already pointed out the limits of such distinctions, arguing that public managers perform multiple roles and implying the need for integrative models of leadership (Fernandez 2005; Van Wart 2003). The point we make here is somewhat different, which is that leadership—even the kind that seeks to inspire—can work through formal management processes. The empirical evidence of this article shows transformational leaders exerting influence through performance systems, while also creating and managing a culture that enables those processes to succeed. Transformational leadership recognizes that leaders are not mere technicians—they should inspire, stimulate, and act as role models. But in practice, effective transformational leadership must pull the levers of formal organizational systems. There is a flipside to this. Formal systems are generally not self-implementing but require skilled leaders.

A third implication is that the indirect effects of leadership may be among the most crucial predictors of reform outcomes. This suggests an image of leaders that is different from that of charismatic doers or technocratic tinkerers. Leaders set the table for success by fostering the right organizational conditions. For purposeful performance information use, fostering goal clarity and a developmental culture are the right conditions. For other reforms, the conditions may be different, and the challenge for leaders is not just to figure out how to cultivate those conditions but to identify which conditions matter. The results here do not imply that the *only* influence of leadership is indirect. Rather, our results suggest that only focusing on direct effects underestimates the potential influence of leadership. To put it another way, our advice to leaders who seek to foster organizational change is not only to support reforms via direct involvement and by establishing credible commitment, but also to set the conditions necessary for reforms to succeed.

Focusing on the indirect factors may be difficult since altering key mediating variables, such as culture, is a demanding and long-term task. Reframing administrative leadership in terms of intermediate management factors may also be a hard sell for leaders who face intense pressure to quickly demonstrate that their program has political relevance and measurable success. On the other hand, such factors, once changed, can have a long-run positive impact on a whole range of important organizational variables long after the leader has departed. Setting the table can become the skilled leader's legacy.

Appendix: Variable Measurement

Reported Performance Information Use

I regularly use performance information to make decisions.

My department regularly compares actual achievement with performance objectives.

(1 = strongly disagree, 6 = strongly agree).

Goal Clarity (Pandey and Wright, 2006; Rainey 1983)

This organization's mission is clear to almost everyone who works here.

It is easy to explain the goals of this organization to outsiders.

This organization has clearly defined goals.

(1 = strongly disagree; 5 = strongly agree).

Transformational Leadership (adapted from House 1998)

The Chief Administrative Officer/City Manager clearly articulates his/her vision of the future; leads by setting a good example, challenges me to think about old problems in new ways, says things that make employees proud to be part of the organization, and has a clear sense of where our organization should be in 5 years.

(1 = strongly disagree; 5 = strongly agree).

Information Availability (adapted from Brudney, Hebert, and Wright 1999)

Please indicate the extent to which your organization has implemented each of the following Benchmarks for measuring program outcomes or results.

Obtaining an external review of organizational performance.

Systems for measuring customer satisfaction.

Developmental Culture (adapted from Zammuto and Krakower 1991)

My department is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.

The glue that holds my department together is a commitment to innovation and development. There is an emphasis on being best.

My department emphasizes growth and acquiring new resources. Readiness to meet new challenges is important.

(1 = strongly disagree; 5 = strongly agree)

Leader Tenure—Number of year chief administrative officer/city manager has held current position.

Follower Tenure—Number of years respondent has held current position.

Follower Gender dummy variable: 1 = female.

Number of Employees—Number of employees in city government.

External service provider dummy variable: 1 = respondent from Public Works, Economic Development, Parks and Recreation, Planning, and Community Development; 0 = respondent from Finance/Budgeting, Personnel/Human Resources.

REFERENCES

Amabile, Teresa M., Regina Conti, Heather Coon, Jeffery Lazenby, and Michael Herron. 1996. Assessing the work environment for creativity. *Academy of Management Journal* 39:1154–84.

Ammons, David N., and William C. Rivenbark. 2008. Factors influencing the use of performance data to improve municipal services: Evidence from the North Carolina benchmarking project. *Public Administration Review* 68:304–18.

Andrews, Matthew, and Donald P. Moynihan. 2002. Why reforms don't always have to work to succeed: A tale of two managed competition initiatives. *Public Performance and Management Review* 25:282–97.

Askim, Jostein, Å Johnsen, and Knut-Andreas Christophersen. 2008. Factors behind organizational learning from benchmarking: Experiences from Norwegian municipal benchmarking networks. *Journal of Public Administration Research and Theory* 18:297–320.

Avolio, Bruce J., Bernard M. Bass, and Dong I. Jung. 1999. Reexamining the components of transformational and transactional leadership using multifactor leadership questionnaire MLQ-Form 5X. *Journal of Occupational and Organizational Psychology* 72:441–62.

Baron, Reuben M., and David A. Kenny. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology* 51:1173–82.

Bass, Bernard M., and Bruce J. Avolio. 1990. The implications of transactional and transformational leadership for individual, team and organizational development. In *Research in organizational change and development*, eds. R. W. Woodman and W. A. Passmore, 231–72. Greenwich, CT: JAI.

Bass, Bernard M., Bruse J. Avolio, Dong I. Jung, and Yair Berson. 2003. Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology* 88: 207–18.

Bass, Bernard M., and Ronald E. Riggio. 2006. *Transformational leadership*, 2nd ed. Mahwah, NJ: Lawrence Erlbaum.

Behn, Robert D. 2007. *What all mayors would like to know about Baltimore's CitiStat performance strategy*. Washington, DC: IBM Center for the Business of Government.

Berry, Frances S., Ralph S. Brower, and Geraldo, Flowers. 2000. Implementing performance accountability in Florida. *Public Productivity & Management Review* 23:338–58.

Bourdeaux, Carolyn and Grace Chikoto. 2008. Legislative influences on performance management reform. *Public Administration Review* 68:253–65.

Broadnax, Walter D., and Kevin J. Conway. 2001. The social security administration and performance management. In *Quicker, better, cheaper: Managing performance in American government*, ed. D. Forsythe, 143–75. Albany, NY: Rockefeller Institute Press.

Brudney, Jeffery L., F. Ted Hebert, and Deil S. Wright. 1999. Reinventing government in the American States: Measuring and explaining administrative reform. *Public Administration Review* 59:19–30.

Colbert, Amy E., Amy L. Kristof-Brown, Bret H. Bradley, and Murray R. Barrick. 2008. CEO transformational leadership: The role of goal importance congruence in top management teams. *Academy of Management Journal* 51:81–96.

Curran, Patrick J., Stephen G. West, and John F. Finch. 1996. The robustness of test statistics to normality and specification error in confirmatory factor analysis. *Psychological Methods* 1:16–29.

Dahl, Robert, A., and Charles E. Lindblom. 1953. *Politics, economics, and welfare*. New York, NY: Harper Collins.

de Haven-Smith, Lance and Kenneth C. Jenne. 2006. Management by inquiry: A discursive accountability system for large organizations. *Public Administration Review* 66:64–76.

de Lancer Julnes, Patria, and Mark Holzer. 2001. Promoting the utilization of performance measures in public organizations: An empirical study of factors affecting adoption and implementation. *Public Administration Review* 61:693–708.

Dull, Matthew. 2009. Results-model reform leadership: Questions of credible commitment. *Journal of Public Administration Research and Theory* 19:255–84.

Dumdum, Uldarico R., Kevin B. Lowe, and Bruce J. Avolio. 2002. Meta-analysis of transformational and transactional leadership correlates of effectiveness and satisfaction: An update and extension. In *Transformational and charismatic leadership: The road ahead*, ed. Bruce J. Aviolio and Francis J. Yammarino, 35–65. New York, NY: JAI Press.

Fernandez, Sergio. 2005. Developing and testing an integrative framework of public sector leadership: Evidence from the public education arena. *Journal of Public Administration Research and Theory* 15:197–217.

Hater, John J., and Bernard M. Bass. 1988. Superiors' evaluations and subordinates' perceptions of transformational and transactional leadership. *Journal of Applied Psychology* 73:695–702.

Hayduk, Leslie A. 1987. *Structural equation modeling with LISREL: Essentials and advances*. Baltimore, MD: Johns Hopkins Univ. Press.

House, Robert J. 1998. Appendix: Measures and assessments for the charismatic leadership approach: Scales, latent constructs, loadings, Cronbach alphas, interclass correlations. In *Leadership: The multiple level approaches contemporary and alternative*, ed. Fred, Dansereau and Francis J. Yammarino. London, UK: JAI.

Howell, Jane M., and Bruce J. Avolio. 1993. Transformational leadership, transactional leadership, locus of control, and support for innovation: Key predictors of consolidated business-unit performance. *Journal of Applied Psychology* 78:891–902.

Jaccard, James, and Choi K. Wan. 1996. *LISREL approaches to interaction effects in multiple regression*. Thousand Oaks, CA: Sage. Sage University Papers series on Quantitative Applications in the Social Sciences. 07–114.

James, Lawrence R., Stanley A. Mulaik, and Jeanne M. Brett. 1982. *Causal analysis: Assumptions, models, and data*. Beverly Hills, CA: Sage.

Jennings, Eedward T., and Meg P. Haist. 2006. Putting performance measurement in context. In *The art of governance*, eds. Patricia W. Ingraham and Laurence E. Lynn, 173–94. Washington, DC: Georgetown Univ. Press.

Jöreskog, Karl G., and Dag Sörbom. 1992. *LISREL 8 user's reference guide*. Chicago, IL: Scientific Software International.

Jung, Chan Su, and Hal G. Rainey. 2007. *Factors related to PART performance scores of U.S. federal programs: Goal ambiguity, program size, type, political content, and budget increases.* A paper prepared for presentation at the Ninth National Public Management Research Conference. University of Arizona, Tucson, Arizona.

Jung, Dong I., Chee Chow, and Anne Wu. 2003. The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly* 14:525–44.

Kelman, Steven. 2007. Public management and organization studies. In Academy of Management Annals, vol. 1, eds. Arthur Brief and James P. Walsh, 225–67. New York: Erlbaum.

Latham, Gary P., Laura Borgogni, and Laura Petitta. 2008. Goal setting and performance management in the public sector. *International Public Management Journal* 11:385–403.

Lipsky, Michale. 1980. *Street-level bureaucracy*. New York, NY: Russel Sage Foundation.

Lowe, Kevin B., K. Galen Kroeck, and Nagaraj Sivasubramaniam. 1996. Effectiveness correlates of transformational and transactional leadership: A meta-analytic review of the MLQ literature. *Leadership Quarterly* 7:385–425.

MacGregor Burns, James. 1978. *Leadership*. New York, NY: Harper & Row.

McDonald, Roderick P., and Moon-Ho R. Ho. 2002. Principles and practice in reporting structural equation analyses. *Psychological Methods* 7:65–82.

Melkers, Julia, and Katherine Willoughby. 2005. Models of performance-measurement use in local governments: Understanding budgeting, communication, and lasting effects. *Public Administration Review* 65:180–90.

Meyer, Herbert H. 1991. A solution to the performance evaluation feedback enigma. *Academy of Management Executive* 5:68–76.

Meyer, Herbert H., Emanuel, Kay, and John R. P. French, Jr. 1965. Split roles in performance evaluation. *Harvard Business Review* 43:123–9.

Moynihan, Donald P. 2005. Goal-based learning and the future of performance management. *Public Administration Review* 65:203–16.

———. 2008. *The dynamics of performance management*. Washington, DC: Georgetown Univ. Press.

———. 2009. Through a glass darkly: Understanding the effects of performance regimes. *Public Performance & Management Review* 32:586–98.

Moynihan, Donald P., Sergio Fernandez, Soonhee Kim, Kelly LeRoux, Suzanne J. Piotrowski, Kaifeng Yang, and Bradley E. Wright. 2011. Performance measurement amidst governance complexity. *Journal of Public Administration Research and Theory* 21:i141–i155.

Moynihan, Donald P., and Patricia W. Ingraham. 2004. Integrative leadership in the public sector: A model of performance information use. *Administration and Society* 36:427–53.

Moynihan, Donald P., and Noel Landuyt. 2009. How do public organizations learn? Bridging structural and cultural divides. *Public Administration Review* 69:1097–105.

Moynihan, Donald P., and Sanjay K. Pandey. 2010. The big question for performance management: why do managers use performance information? *Journal of Public Administration Research and Theory* 20:849–66.

Pandey, Sanjay K., and Hal G. Rainey. 2006. Public managers' perceptions of organizational goal ambiguity: Analyzing alternative models. *International Public Management Journal* 9:85–112.

Park, Sung M., and Hal G. Rainey. 2008. Leadership and public service motivation in U.S. federal agencies. *International Public Management Journal* 11:109–42.

Pandey, Sanjay K., and Bradley E. Wright. 2006. Connecting the dots in public management: Political environment, organizational goal ambiguity and the public manager's role ambiguity. *Journal of Public Administration Research and Theory* 16:511–32.

Poister, Theodore H., and Gregory Streib. 1999. Performance measurement in municipal government: Assessing the state of the practice. *Public Administration Review* 59:325–35.

Podsakoff, Philip M., Scott B. MacKenzie, Robert H. Moorman, and Richard Fetter. 1990. Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *Leadership Quarterly* 1:107–42.

Quinn, Robert E., and John Rohrbaugh. 1981. A competing values approach to organizational effectiveness. *Public Productivity Review* 5:122–40.

Radin, Beryl. 2006. *Challenging the performance movement: Accountability, complexity, and democratic values*. Washington, DC: Georgetown Univ. Press.

Rainey, Hal G. 1983. Private agencies and private firms: Incentive structures, goals and individual roles. *Administration and Society* 15:207–42.

———. 2009. *Understanding and managing public organizations*. San Francisco, CA: Jossey Bass.

Rainey, Hal G., Robert W. Backoff, and Charles L. Levine. 1976. Comparing public and private organizations. *Public Administration Review* 36:233–46.

Sarros, James C., Brian K. Cooper, and Joeseph Santora. 2008. Building a climate for innovation through transformational leadership and organizational culture. *Journal of Leadership & Organizational Studies* 15:145–58.

Schneider, Martin. 2004. Performance management by culture in the national labor relations board's division of judges and the German labor courts of appeal. *Journal of Public Administration Research and Theory* 14:19–32.

Shin, Shung J., and Jing Zhou. 2003. Transformational leadership, conservation, and creativity: Evidence from Korea. *Academy of Management Journal* 46:703–14.

Soss, Joe, Richard Fording, and Sanford Schram. 2011. The organization of discipline: From performance management to perversity and punishment. *Journal of Public Administration Research and Theory* 21:203–32.

Stivers, Camilla. 2008. *Governance in dark times: Practical philosophy in public service*. Washington, DC: Georgetown Univ. Press.

Trottier, Tracey Montgomery, Van Wart, and XiaoHu Wang. 2008. Examining the nature and significance of leadership in government organizations. *Public Administration Review* 68:319–33.

US Office of Management and Budget (US OMB). 2010. *Analytical perspectives, Budget of the United States Government, Fiscal Year 2011*. Washington, DC: Government Printing Office.

Van de Walle, Steven, and Wouter Van Dooren 2008. Introduction: Using public sector information. In *Performance information in the public sector: How it is used*, ed. Steven Van de Walle and Wouter Van Dooren, 1–8. Houndmills, UK: Palgrave.

Van Wart, Montgomery. 2003. Public-sector leadership theory: An assessment. *Public Administration Review* 23:214–28.

Weiss, Janet A., and Sandy K. Piderit. 1999. The value of mission statements in public agencies. *Journal of Public Administration Research and Theory* 9:193–223.

Walker, Richard W., Fariborz Damanpour, and Carlos A. Devece. 2010. Management innovation and organizational performance: The mediating effect of performance management. *Journal of Public Administration Research and Theory* 21:367–86.

Wright, Bradley E. 2001. Public sector work motivation: A review of the current literature and a revised conceptual model. *Journal of Public Administration Research and Theory* 11:559–86.

———. 2004. The role of work context in work motivation: A public sector application of goal and social cognitive theories. *Journal of Public Administration Research and Theory* 14:59–78.

———. 2007. Public service and motivation: Does mission matter? *Public Administration Review* 67:54–64.

Wright, Bradley E., and Sankay K. Pandey 2010. Transformational leadership in the public sector: Does structure matter? *Journal of Public Administration Research and Theory* 20:75–89.

———. 2011. Public organizations and mission valence: When does mission matter? *Administration & Society* 43:22–44.

Yair, Berson, and Bruce J. Avolio. 2004. Transformational leadership and the dissemination of organizational goals: A case study of a telecommunication firm. *Leadership Quarterly* 15:625–46.

Yang, Kaifeng, and Jung Y. Hsieh. 2006. Managerial effectiveness of government performance measurement: Testing a middle range model. *Public Administration Review* 67:861–79.

Yukl, Gary R. 2008. How leaders influence organizational effectiveness. *The Leadership Quarterly* 19:708–22.

Zammuto, Raymond F., and Jack K. Krakower. 1991. Quantitative and qualitative studies of organizational culture. *Research in Organizational Change and Development* 5:83–114.