Leadership and Reform:
Mapping the Causal Pathways of Performance Information Use

Donald P. Moynihan, University of Wisconsin-Madison, dmoynihan@lafollette.wisc.edu
&
Sanjay K. Pandey, Rutgers University-Newark, skpandey@andromeda.rutgers.edu
&
Bradley E. Wright, University of North Carolina at Charlotte, bwright@uncc.edu

Paper presented at the 10th Public Management Research Conference, Columbus, Ohio, October 1-3, 2009

Abstract

This paper offers empirical evidence on a specific question: how does leadership foster the use of performance data? More broadly, it informs the ways in which we understand how leadership can influence the implementation of management reforms. Previous research suggests that leadership matters to performance information use among their employees, but under-specifies the causal processes by which this influence occurs. This paper uses structural equation modeling to suggest that transformational leadership has a positive but indirect effect on performance information use via two mediating factors: goal clarity and organizational culture. The results inform studies of leadership and reform by demonstrating how leadership can foster the effectiveness of new management systems. Even where leadership does not have a direct relationship on the reform outcome, it can still exert important indirect effects that could easily be missed by most methodologies.

Introduction: If a Tree Falls in the Forest…

The last decades have seen governments devote unanticipated time and resources to creating performance data. Given the many competing factors that shape performance it is difficult to evaluate performance management reforms in terms of their outcomes. Perhaps it is for this reason that there remains "surprisingly little effort to develop a theory of performance management" (Jennings and Haist 2006, 174). Performance information use provides a more tractable means of examining the impact of performance management reforms by offering a variable that can be analyzed from the perspective and tools of organizational behavior.

Performance information is perhaps the best summary measure of the impact of results-based reforms. Van Dooren (2008, 22) argues that "If we want to study the successes and failures of performance movements, we have to study the use of performance information," but notes that there has been relatively little scholarly attention to this question. If we hope that performance reforms result in more purposeful goal-oriented managers, then the use of performance data is an essential first step.

Like the question of whether a tree falling in the forest when no-one is around actually creates a sound, it is reasonable to ask: "If managers do not use performance data, is there such a thing as performance management?" As Stivers argues (2008, 126) it is only in the use of performance information that performance management is truly enacted. Some in government have also expressed concern about the failure of performance management systems to foster use. The new OMB Deputy Director for Management, and Chief Performance Officer, Jeffery Zients, criticized the Bush administrations performance management efforts for failing to encourage use, and added: "The test of a performance management system is, is it being used to make important resource allocation and budget decisions" (Newell 2009).

This paper seeks to add to our limited empirical knowledge on the factors that lead to performance information use. In particular, we seek to examine the role that leadership plays. Previous research has paid some 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. This allows us to examine how a broader and better-developed conceptualization of leadership matters to performance information use. Second, we make the case that the role of effective leadership is indirect. It sets the conditions for performance management to succeed. In this paper we propose that leadership fosters

performance information use by increasing organizational goal clarity and fostering a supportive organizational culture.

More broadly, the research sheds light on the relationship between leadership and successful reform efforts. The findings suggest that the role of leadership in shaping reform implementation is often indirect, but no less important than direct influences. 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, e.g. organizational culture. Generally studies of leadership that examine complex indirect causal pathways tend to come from qualitative research. Here, we use a quantitative approach, structural equation modeling, that allows us map out the indirect effects of leadership.

The Link between Leadership and Performance Information Use

Despite the limited empirical study of performance information use, one of the emerging findings seems to be that "leadership matters." But there are significant gaps in understanding how leadership matters, and this paper tackles 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 is modeled as leadership attitudes or actions directly related to performance management practices. Given the nascent level of scholarship on the topic, it makes sense to seek 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 place research on public sector performance information use into mainstream organizational behavior (Kelman 2007).

Existing research suggests a couple of ways that leadership matters to performance information use. First, where leaders signal that performance information systems are a priority, other managers will be more likely to take it seriously. Melkers and Willoughby (2005) find that leadership support for performance management is significantly related to the communication of performance information, and to creating lasting effects from performance information. By

devoting time, resources, and symbolic reward to specific management issues, leaders communicate its importance (Moynihan and Landuyt 2009), and establish a credible commitment toward a reform (Dull 2009). 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. Askim, Johnsen and Christophersen (2008) found that where senior managers and politicians participated in benchmarking processes, the data from these processes were more likely to influence decisions. Broadnax and Conway (2000, 31) detail how agency managers cited a leadership mantra at the Social Security Administration that performance management was "the right thing to do." Dull (2009) demonstrates that leadership commitment to performance management fostered use among federal employees across agencies. Agency leaders may also decide that performance management is not really a priority. Moynihan (2005) recounts that among state government agencies, leaders assessed whether reforms would help their existing agenda. Where it did not, they were willing to engage in pro-forma compliance, but little else, and their managers responded in kind.

There is other research to suggest that how leadership matters depends in part on the role of the leader and their audience. Moynihan and Ingraham (2004) show senior state executive branch officials are more likely to be influenced by gubernatorial attention to performance management, while agency officials will be more influenced by agency leaders. Legislative leadership on performance management routines is associated with lower use among state officials (Moynihan and Ingraham 2004). A similar finding comes from Bourdeaux and Chikoto (2008), who show that more professional legislatures tend to reduce performance information use among agency officials, while gubernatorial power tends to foster use. The findings on legislative leadership suggests that legislative pursuit of performance reforms may be viewed by agency managers as a means to extend control over agencies. Elsewhere, Moynihan and Pandey (2008) show that leaders in higher-level generalist positions (city managers and assistant city managers) are less likely to use performance information than leaders of specific agencies. This suggests that the capacity of generalist leaders to encourage performance information use rests largely on creating an impression of support, rather than based on a personal example of use.

Another way in which leadership can foster performance information use is by creating a demand for performance (Andrews and Moynihan 2002). As leaders indicate that they will hold

employees accountable for outcomes, they create an incentive for managers to use measures of those outcomes. For example, among North Carolina cities, Ammons and Rivernbark report that the willingness of officials to compare results with others has fostered use. An even more aggressive pursuit of performance seems to typify leadership "stat" model of performance management, where managers are expected to account for performance in a public setting (Behn 2007). But an aggressive demand for performance might backfire, fostering defensiveness among employees. The risk of this approach is that managers perceive leaders as playing a "gotcha" game, seeking to score political points at the expense of the reputation of the manager (DeHaven-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.

Transformational Leadership and Performance Information Use

While 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. There are some exceptions. Dull (2009) draws from rational choice models to posit that credible commitment on the part of leaders is essential. Moynihan and Ingraham (2004) develop a model of integrative leadership that emphasizes that leadership should succeed by working closely with management systems. Such work is valid and valuable. Here, we seek to add to it by drawing on perhaps the most prominent model of leadership in organizational behavior, transformational leadership.

Research has not only validated the existence of transformational leadership but also has consistently linked the practice of these transformational leadership behaviors with employee performance and satisfaction (Bass and Riggio 2006), even in government (Dumdum, Lowe, and Avolio 2002; Lowe, Kroeck, and Sivasubramaniam 1996; Trottier, Van Wart and Wang 2008; Wofford, Whittington, and Goodwin 2001) and nonprofit (Egri and Herman 2000) organizations.

Cumulatively, transformational leadership gives rise to a purposeful, committed, and innovative approach to managing. These same qualities are those that are needed for performance information use. Transformational leadership is expected to shape employee behavior in three main ways. First, transformational leaders direct and inspire employee effort by raising their awareness of the importance of organizational values and outcomes. Part of the

process of doing so requires them to create a sense of vision, mission and purpose among employees, giving 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.

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 is consistent with 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 is more likely to appear relevant as they have a better sense of how to use it.

Descriptions of the leadership qualities required for performance management emphasize the importance of developing and refining a clear sense of values, mission, and vision (Poister and Strieb 1999). Poister and Streib (1999) suggest that performance management processes provide a vehicle for skilled leadership, but is not a substitute for it. Jennings and Haist (2006) propose that goal-setting ability is one of the key leadership functions that can lead to successful performance management.

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). A natural consequence of such clarity at the job-level is that performance information can now be used profitably.

Of course, setting a vision, mission and goals are easier in some context than others, and Radin (2006) has argued that it is for this reason that less complex functions are more likely to be

associated with successful performance systems. There are, however, few government organizations that have the luxury of pursuing simple organizational goals. Indeed, a range of illustrious contributors to public administration literature have argued that public organizations must, by necessity, pursue "multiple, conflicting, and vague" goals (e.g. Dahl and Lindblom 1953; Lipsky, 1980; March and Olsen 1976; Rainey, Backoff and Levine 1976; Wildavsky 1979). Pandey and Rainey (2006) test the competing influence of political, individual and organization factors on organizational goal clarity. They find that it is organizational factors – such as effective internal communications, task specialization and decentralization – that explain most of the variance in employee understanding of goals. These findings are consistent with hypothesizing a role for leadership in fostering goal clarity, since leaders are better able to influence such organizational variables than political or individual factors.

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 sub-unit goals. Colbert et al. (2008), in an examination of private sector organizations, report that CEOs with transformational leadership qualities are able to positively influence the importance officials at the level of the vice president 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 about 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, than transformational leadership will foster goal clarity, which in turn will encourage performance information use.

H1: Transformational leadership behaviors will have an indirect, positive effect on performance information use through its influence on goal clarity

Transformational Leadership and Developmental Culture

Leadership has an important influence on an organization's culture (Schein 1992). Transformational leadership, in particular, can be expected to encourage a more adaptive or developmental culture by emphasizing employee innovation, problem solving and empowerment (Avolio and Gibbson, 1988; Bass 1985). Developmental cultures are associated with a focus on the organization, flexibility, adaptability and readiness, growth, and resource acquisition (Quinn and Rohrbaugh 1981).

Each of the three types of behaviors enacted by transformational leaders contributes to 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; Elkins and Keller, 2003; Hater and Bass, 1998). 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 that increases the degree to which employees will 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 (Weiss, 1996; Weiss and Piderit, 1999; Wright, 2007; Wright and Pandey, forthcoming). In other words, by linking follower identities or values to those of the organizations, transformational leaders increase their followers intrinsic motivation to perform their duties (Jung, Chow, and Wu, 2003; Park and Rainey, 2008; Wright, Moynihan and Pandey, 2009). Intrinsic motivation, in turn, has been found to increase creativity (Amabile et al 1994; Shin and Zhou, 2001; Zhou 1998) perhaps because such motivation helps employees overcome the fear of taking risks or challenging status quo. Consistent with these three processes, several studies have found that transformational leadership increases behavior characteristic of developmental cultures such as employee empowerment (Howel and Avolio, 1993; Park and Rainey, 2008), creativity and innovation (Jung, Chow and Wu, 2003; Shin and Zhou, 2001; Sosik, Kahai and Avolio, 1998).

Culture has been hypothesized as a buffer that can block, welcome, or adapt 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 mission-oriented cultures **(**de Lancer Julnes and Holzer 2001; Moynihan and Landuyt 2009) are positively associated with

the success of performance reforms. For example, Broadnax and Conway's case study of performance management in the Social Security Administration saw the leadership actively try to reshape the organizational culture via newsletters, email, and other symbols, but the most important action was to have the agency leader regularly meet with field office managers and query them on performance indicators. The reason for these meetings, according to one executive interviewer, was that "You don't change culture through memos." Other research emphasizes the importance that professional norms are consistent with performance management (Schneider's 2004), or that cultural attributes consistent with organizational learning -- such as norms of dialogue, information-sharing, an openness to challenge the status quo -- are also predictive of performance information use (Moynihan 2005; Moynihan and Landuyt 2009).

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 of culture that is not framed in the context of 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/punish) encourages its collection and use as such use is much less threatening to employees because it has no summative consequences. As a result, employees are less defensive and more honest about weaknesses as well as more open to discussing performance problems and taking suggestions for performance improvement (Meyer et al., 1965; Meyer, 1991; Moynihan 2005).

This link between leadership, culture, measurement and performance was highlighted by the OMB Chief Performance Officer Jeffrey Zients in testimony before the Committee on Homeland Security and Governmental Affairs (emphasis added):

> As a CEO and advisor to CEOs, I found that leadership, measurement, and a motivated workforce create the foundation for good performance. *Leadership* starts with putting together the right team and articulating the right goals for the organization. *Measurement* means translating those goals into operating plans with clear metrics and frequent checkpoints. A motivated workforce requires creating a *culture* to attract, develop, and

retain the best talent. Together, they lead to strong performance, accountability, and, ultimately, to improved results.

H2: Transformational leadership behaviors will have an indirect, positive effect on performance information use through its influence on culture.

There is also significant evidence that information availability fosters performance information use (Bourdeaux and Chitoko 2008; de Lancer Julnes and Holzer 2001, Moynihan and Ingraham 2004; Moynihan and Landuyt 2009; although Melkers and Willoughby (2005) offer contrary findings). We therefore include information availability as a control in our model, assuming it fosters greater performance information use. In itself, the availability of performance information serves as a secondary and limited measure of performance management success, in that it appears to be a necessary but not sufficient predictor of use. While not the central theoretical interest of our study, we also therefore propose that that organizations that enjoy higher goal clarity and have a developmental culture are likely to also employ performance measurement processes that generate data, and that in turn transformational leadership encourages performance information availability via those mediating factors.

H3: Transformational leadership behaviors will have an indirect, positive effect on performance information availability through its influence on goal clarity.
H4: Transformational leadership behaviors will have an indirect, positive effect on performance information availability through its influence on culture.

Data

The data for this study were 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 was comprised of senior managers (both general and functional) in US local government jurisdictions with populations over 50,000. The general managers included the city manager and assistant/deputy city managers. Functional managers included in the study headed key departments, namely, Finance/Budgeting, Public Works,

Personnel/HR, Economic Development, Parks and Recreation, Planning, and Community Development.

The sample design and construction for the NASP-IV study was aided by the International City/County Management Association (ICMA). Based on the study criteria, ICMA compiled a list of potential respondents and the NASP-IV team used publicly available information to verify each respondent and identify a working email address. These efforts resulted in 3,316 individuals in the study sample.

Each respondent in the study sample received an initial letter through US Mail which introduced the study and was directed the respondent to complete the survey available on the study website using an assigned participation code. After the initial letter via US Mail, multiple methods were used in follow-up efforts to contact the respondents – e-mail, fax, and phone calls. When the study concluded 1,538 of the 3,316 had responded, for a response rate of 46.4%. Given that part of the study's focus was on the leadership behavior exhibited by the chief administrative officer as well as its potential influence of organizational culture and information use, we excluded the responses by chief administrative officers themselves. This reduced the number of observations to the 1,322 responses from functional and deputy/assistant managers.

Of these 1,322 respondents, 16.7% were general managers (deputy or assistant) and the rest managed specific city departments and/or functions. This distribution of functional specialization of respondents closely matched the distribution of functional specializations in the sample. The mean age was 50 with an inter-quartile range of 9 (25^{th} percentile being 46 and 75^{th} percentile being 57). As expected, a sizable majority were male (68.1%), white (85.4%), highly educated (more than 60% with graduate degrees), and well compensated (64% with salaries over $100,000).

Given our interest in looking at the leadership, culture and performance use in the organization, we aggregated responses by organization so that the organization was the unit of analysis. At least one response was received from 489 of the 529 local governments in the sampling frame. In order to reduce potential bias associated with the perspective of any single respondent, the study sample was reduced to the 230 local governments for which at least 3 responses (excluding responses from the chief administrative officer) were received. This approach is consistent with previous studies analyzing subordinate reports of transformational leadership within organizations (Bommer, Rubin and Baldwin 2004; Judge and Bono 2000).

Measures

Wherever possible, the study variables were measured using multiple item measures that have been tested and validated in earlier studies (see the Appendix A). Organizational culture is adapted from Zammutto and Krakower's (1991) measure of developmental culture. Employee perceptions of the clarity of the organization's goals were measured using a three-item scale (Pandey and Wright, 2006; adapted from Rainey (1983). Performance information availability is a subset of Brudney, Hebert, and Wright's (1999) measures of administrative reform that deal with the practices of strategic planning, customer service measurement, benchmarking and inclusion of measures in budgets. Collectively, the existence of these processes is expected to lead to a flow of performance data.

Our key independent variable, transformational leadership, was measured using a small set of items selected specifically for this study. Items were selected from four socialized charismatic leadership subscales (vision, role modeling, inspirational communication, and intellectual stimulation) developed by House (1998) that depict the three transformational dimensions (inspirational motivation, idealized influence and intellectual stimulation) previously described.[1] One item was taken from each of three subscales (Intellectual stimulation, role modeling and inspirational communication) while 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 (House 1998) that reflect the three dimensions of transformational leadership, a factor analysis of these items extracted only one factor that explained nearly 76% of their variance and is consistent with previous findings that suggest 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, with almost no consistency in measurement among the studies cited in above. In this study we use two items, asking the respondents if they as individuals use performance information to make decisions and if their department regularly compares actual performance with performance goals. In two respects our measurement approach is consistent with previous research, in that we rely

[1] Although transformational and charismatic leadership are often discussed as separate theories in the literature, conceptual and empirical evidence suggests a considerable degree of overlap exists between these theories and their measures (Avolio, Bass and Jung 1999; Hunt 1999; Yukl 1999).

on self-reported measures of individual and group behavior, and treats performance information use as unidimensional and purposeful.[2]

Table 1 provides the univariate and bivariate statistics for each of the study's measures. Reliability estimates (Cronbach's coefficient alpha) ranged from 0.79 to 0.92 and support the use of these measures with all five study measures above the 0.70 threshold suggested by Nunnally and Bernstein (1994). The bivariate relationships provide evidence of the study measures' discriminant validity. In addition to a low average bivariate correlation (0.43), the largest bivariate correlation--between transformational leadership and organizational goal clarity--was 0.59, suggested that no measure shared much more than one-third of its variance with any other measure. Tests of univariate normality suggested that all five measures and corresponding 16 items were within range found to be acceptable for maximum likelihood estimation in structural equation modeling **(**Curran, West and Finch, 1996**)**.

Analysis and Results

To test the study's hypotheses, a series of covariance structure analyses of the data were 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 (Hayduk, 1987; Jöreskog and Sörbom, 1992). In the first stage, the model performs a confirmatory factor analysis to construct the latent variables from their respective questionnaire items and assess the validity and reliability of the study measures (summary of results provided above). In the second stage, structural equation model subsumes conventional regression and path analysis models to test the hypothesized relationships among the latent variables. 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).

In the first stage of the analysis, the confirmatory factor analysis testing the hypothesized measurement model provided a good fit to the data ($\chi^2(94)=155.12$, GFI = 0.92, CFI = 0.99,

[2] Indeed, previous research that reported different measures of use found that these measures were so highly correlated that they were aggregated into a single scale (Bourdeaux and Chitoko 2008; de Lancer Julnes and Holzer 2001; Dull 2009).

Standardized RMR = 0.04, RMSEA = 0.05, CFit = 0.34) suggesting that the items converged on their respective latent variables and that each measure represented a distinct latent variables. In this latter model, all of the scale items were found to have statistically significant factor loadings ($p < 0.05$) for their respective latent constructs (lambda values ranged from 0.69 – 0.92).

In the second stage, the structural equation model subsumes conventional regression and path analysis models to test the hypothesized relationships among the latent variables. This stage tests the hypothesized relationships by estimating the overall fit of the model as well as the individual parameter estimates. The overall model fit of the hypothesized structural model was tested using fit indices recommended by Jaccard and Wan (1996). The majority of these indices suggested that the theoretical model accurately captured the pattern of relationships found in the data (comparative fit index = .99, goodness-of-fit index = .92, root mean square error of approximation = .05, P-value test for close fit = .40 and the standardized RMR was 0.04). Only the maximum likelihood chi-square ($\chi^2(96)=155.47$, $p < .05$) was not consistent with overall model fit. The lack of fit found by the chi-square test, however, was 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, Brett 1982). Despite the statistically significant chi square, the results suggested that the theoretical model accurately captured the pattern of relationships found in the data. In addition to five of the six fit indices being consistent with good model fit, the path coefficients and t tests for all seven specified paths were statistically significant ($p < 0.05$) and in the predicted direction.

Figure 1 presents the parameter estimates for the structural model as standardized regression weights. The results provide some insights for the proximate factors that shape performance information use. Consistent with expectations, these findings confirm the importance of organizational goal clarity, developmental culture and performance information availability in increasing performance information use. When taken together, these three variables explain over a third (37 percent) of the variance in reported use of performance information.[3]

The findings also provide insights on the factors that shape performance information availability. While not the central theoretical purpose of the paper, the model also specified that

[3] Coefficients of determination for endogenous variables can be calculated from Figure 1 as one minus the error term for the latent variable (E).

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 increases explained nearly half (48 percent) of the variance in the availability of performance information.

The central goal of the paper was to understand the relationship between transformational leadership and performance information use. Transformational leadership had substantial direct effects on both goal clarity and developmental culture and, through these relationships, an indirect effect on both performance information availability and use. In other words, there is a cascading effect. LISREL's estimate of transformational leadership's indirect effect on performance information availability ($\beta = 0.45$, $t = 7.02$) and performance information use ($\beta = 0.36$, $t = 6.89$) were both statistically significant at $p < 0.05$.

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 tested this alternative explanation via models that posited a direct relationship between transformational leadership, and performance information availability or performance information use. Neither model produced statistically significantly ($p > 0.05$) improvements in the overall model fit ($\chi_d^2(1)=0.02$ and $\chi_d^2(1)=0.34$, respectively) and the path coefficients representing each direct relationship was not statistically significant ($p > 0.05$). Together, these results strongly suggests that the relationships between transformational leadership and either performance information availability or use are fully mediated by goal clarity and developmental culture.

Implications for Leadership and Reform: Setting the Table

Leadership is one of the most difficult aspects of public management and organizational behavior. It has such popular resonance in the public mind that at times it becomes difficult to discern what it really means. But any extended conversation with those who actually work in organizations leaves little doubt that it matters. And administrative scholarship goes beyond simple anecdotes, tracking the particular contexts and behaviors pertinent to understanding how leadership mattes (Van Wart and Suino 2007). Because it is difficult to distinguish between the leader and leadership, it is a tricky concept to measure and model. It is often the case that

qualitative accounts of leadership are richer than quantitative efforts, but bring their own limitation in terms of generalizability and specifying causal processes. Such accounts may emphasize the charismatic aspects of the leader as a causal factor, without specifying how those characteristics reshape organizational behavior.

This paper has examined how leadership shapes the implementation of perhaps the most widely adopted administrative reform of the last generation. Our efforts to do so are aided by other scholars who have developed and validated the concept for transformational leadership that we employ here. Transformational leadership recognizes that leaders are not mere technicians – they should inspire, stimulate and act a role model. But the concept of transformational leadership can also be connected to other organizational concepts. This is important, because in practice charismatic leadership is not enough – leaders are enmeshed in and must pull the levers of formal organizational systems. Here, we show that transformational leadership connects to the mechanics of performance management. The findings suggest the relevance of transformational leadership for public sector reform efforts, and suggest that additional attention to this concept in public and non-profit settings might help to generate a more comprehensive understanding of how leadership matters.

The results also suggest 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 doer or technocratic tinkerer. Leaders set the table for success by fostering the right organizational conditions. For performance management, 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 which conditions matter.

The results here do not imply that the *only* influence of leadership is indirect. As noted in the literature review, there is significant previous research that shows that when leaders are closely involved with reforms, there is a direct and positive effect on the successful implementation of those reforms. Rather, our results suggest that only focusing on direct effects underestimate the potential influence of leadership. To put it another way, our advice to leaders who are seeking to foster organizational change is: directly support reforms via direct involvement and establishing credible commitment, but also set the conditions necessary for reforms to succeed.

For leaders with a short-term agenda, focusing on the indirect factors may be a difficult, since changing mediating variables such as culture is a demanding and long-term task (Khademian 2002). But 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. While we live in an age where leaders often face intense pressure demonstrate that their program has political relevance and measurable success, reframing administrative leadership in terms of intermediate management factors may be out of step with the times. But it is important. And by showing that such factors do result in more effective organizations, leaders have a reason to pay attention.

Conclusion

This paper has examined the potential of transformational leadership to foster successful performance management systems. Our key dependent variable to represent this success is performance information use. We find that transformational leadership does indeed have a positive effect, but that the results are indirect, influencing performance information availability and use via two mediating factors, goal clarity and organizational culture.

The usual caveats of cross-sectional survey data apply, although we note in this case that such concerns are moderated by the use of multiple respondents for each organization; by the fact that our measure of leadership is not self-reported, but relied on employee assessments of their chief administrative officer; and by the use of previously-tested measures that appear to have discriminant validity.

The findings suggest a broader research agenda for those interested in how leadership shapes administrative 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, for many administrative outcomes it may be that these indirect effects are the only ones that leaders actually influence.

Indeed, this study underlines the importance of examining indirect and intangible aspects of managing public organizations, part of the craft of management that is often underexamined. We do not mean to suggest that managing or leadership necessarily be an either/or proposition with respect to the concrete and intangible aspects of managing. It is hard to generate useful

performance information without well-conceived performance measurement systems. But performance information does not implement itself. It requires skilled leaders. Not only do we need to value intangibles such as leadership but also develop a better understanding of the mechanisms by which leadership has an influence on the use of performance information.

A simple but powerful implication of our findings is that the public sector perhaps needs to invest more in developing transformational leaders. It is not enough just to develop managers (or perhaps transactional or technocratic leaders) who understand the machinery of government and also know when and how to pull the levers to make public organizations perform better.

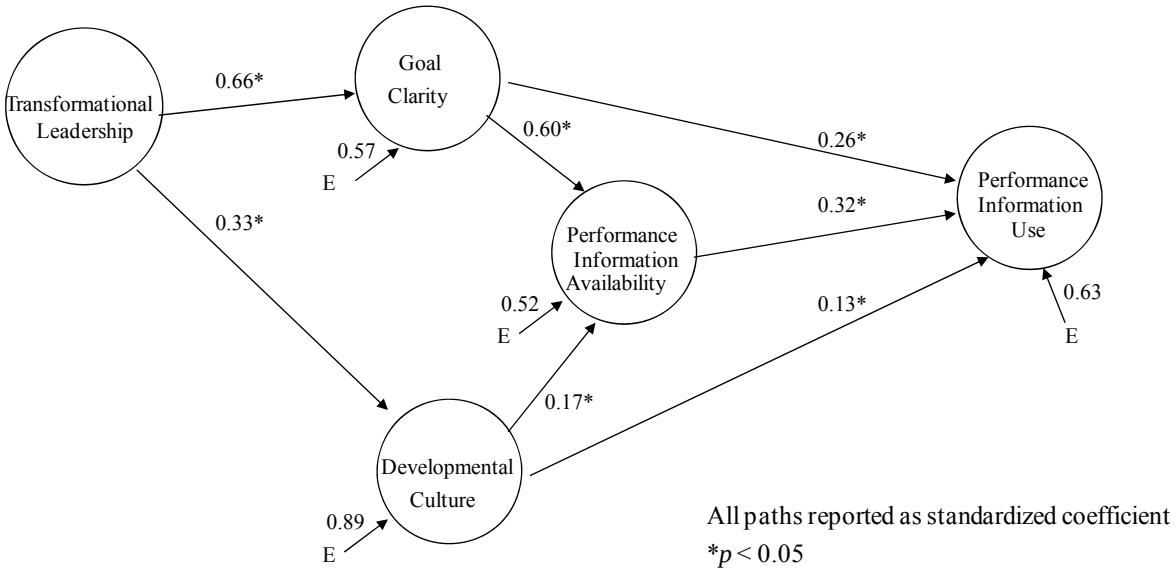
To be sure, our recommendation to invest more in developing transformational leaders can be contested for a variety of reasons. Those with a natural distrust for concentration of power may take issue with the centralization and exercise of power by a transformational leader. Others may raise the issue whether it is possible to develop transformational leaders in government, especially in a public sector work environment beset by procedural and political constraints. Against these concerns, we must first identify and weigh the benefits of transformational leadership for governance. This paper provides empirical evidence of one such benefit.

Table 1. Sample Descriptive Statistics, Correlations, and Reliabilities (n = 230)

			Potential	Observed Score		Correlations & Reliabilities				
	Mean	Stdev	Range	Min.	Max.	1	2	3	4	5
Study Variables										
1 Performance Information Use	8.20	1.63	2 - 12	3.33	11.67	(0.89)				
2 Performance Information Availability	10.60	5.24	3 - 18	4.33	17.33	0.50	(0.84)			
3 Developmental Culture	11.57	1.35	3 - 15	8	14.5	0.36	0.37	(0.79)		
4 Goal Clarity	10.82	1.87	3 - 15	5.20	15	0.47	0.59	0.38	(0.88)	
5 Transformational Leadership	20.02	3.04	5 - 25	10.67	25	0.30	0.44	0.29	0.58	(0.92)

All correlation coefficients statistically significant at $p < 0.05$.

Figure 1


Transformational Leadership
Goal Clarity
Performance Information Availability
Performance Information Use
Developmental Culture
0.66*
0.33*
0.60*
0.26*
0.32*
0.13*
0.17*
0.57
E
0.52
E
0.89
E
0.63
E
All paths reported as standardized coefficient
*p < 0.05

Appendix 1: Variable Measurement

Variable (source)	
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).
Role clarity (Pandey & 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).
Adapted from House (1998)	The Chief Administrative Officer/City Manager clearly articulates his/her vision of the future The Chief Administrative Officer/City Manager leads by setting a good example. The Chief Administrative Officer/City Manager challenges me to think about old problems in new ways. The Chief Administrative Officer/City Manager says things that make employees proud to be part of the organization. The Chief Administrative Officer/City Manager has a clear sense of where our organization should be in five years. (1 = strongly disagree; 5 = strongly agree).
Information availability (Adapted from Brudney, Hebert, and Wright 1999)	Benchmarks for measuring program outcomes or results. Strategic planning that produces clear organization mission statements. Systems for measuring customer satisfaction. (1 = not at all; 6 = fully)
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)

References

Amabile, T. M., R Conti, H. Coon, J. Lazenby and M. Herron. 1996. Assessing the work environment for creativity. *Academy of Management Journal,* 39(5): 1154-1184.

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(3): 282-297.

Askim, Jostein, Åge 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,* 72:441–462.

Baron, R. M. and D.A. Kenny. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology,* 51: 1173-1182.

Bass, B. M. 1985. *Leadership and Performance Beyond Expectations*. New York: Free Press.

Bass, B.M. and B.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, 231-272. Greenwich, CT: JAI.

Bass, B. M. & Riggio, R. E. 2006. *Transformational Leadership* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Behn, Robert D. 2007. *What All Mayors Would Like to Know About Baltimore's CitiStat Performance Strategy.* Washington D.C.: IBM Center for the Business of Government.

Bommer, William H., Robert S. Rubin and Timothy T. Baldwin. 2004. Setting the stage for effective leadership: Antecedents of transformational leadership behavior. *The Leadership Quarterly,* 15: 195-210.

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: Rockefeller Institute Press.

Brudney, J.L., F.T. Hebert and D.S. Wright. 1999. Reinventing government in the American States: Measuring and Explaining Administrative Reform. *Public Administration Review,* 59(1): 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(1): 81-96.

Curran, P.J., S.G. West and J.F. Finch. 1996. The robustness of test statistics to normality and specification error in confirmatory factor analysis. *Psychological Methods,* 1(1): 16-29.

Dahl, Robert A. and Charles E. Lindblom. 1953. *Politics, Economics, and Welfare.* NY: Harper Collins.

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,* (Eds) Bruce J. Aviolio and Francis J. Yammarino, 35-65. New York: JAI Press.

Egri, Carolyn. P. and Susan Herman. 2000. Leadership in the North American environmental sector: Values, leadership styles, and contexts of environmental leaders and their organizations. *Academy of Management Journal,* 43(4): 571-604.

Elkins, T. and R.T. Keller. 2003. Leadership in research and development organizations: A iterature review and conceptual framework. *The Leadership Quarterly*, 14(4-5): 587-606.

Hater, J. J. and B. M. Bass. 1988. Superiors' evaluations and subordinates' perceptions of transformational and transactional leadership. *Journal of Applied Psychology*, 73(4), 695–702.

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

Hayduk, L.A. 1987. *Structural equation modeling with LISREL*. Baltimore: John Hopkins University Press.

Howell, J.M. and B.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(6), 891-902.

House, R. 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,* (Eds.) F. Dansereau, and F. J. Yammarino. London: JAI Press.

Hunt, James G. 1999. Transformational/charismatic leadership's transformation of the field: An historical essay. *Leadership Quarterly*, 10(2): 129-144.

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

James, L. R., S.A. Mulaik and J.M. Brett. 1982. *Causal analysis: Assumptions, models, and data,* Beverly Hills, CA: Sage.

Jennings, Edward T. and Meg Patrick Haist. 2006. Putting performance measurement in context. In *The Art of Governanc,e* (Eds.), Patricia W. Ingraham and Laurence E. Lynn, 173-194. Washington D.C.: Georgetown University Press.

Jöreskog, K. G. and D. Sörbom. 1992. *LISREL VIII: Analysis of linear structural relations*. Mooresville, IN: Scientific Software.

Judge, Timothy A. and Joyce E. Bono. 2000. Five-factor model of personality and transformational leadership. *Journal of Applied Psycholog*y, 85(5): 751-765.

Jung, D.I., C. Chow and A. Wu. 2003. The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly*, 14(4-5): 525-544.

Jung, Chansu 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.
de Lancer Julnes, Patria Holzer and Marc 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.
Kelman, I. 2007. Disaster diplomacy: Can tragedy help build bridges among countries? *UCAR Quarterly,* Fall: 6.
Khademian, Anne M. 2002. *Working with Culture: How the Job Gets Done in Federal Programs.* Washington D.C.: CQ Press.
Lawler, Edward E. 1986. *High-involvement management*. San Francisco: Jossey-Bass.
Latham, Gary P., Laura Borgogni and Laura Petitta. 2008. Goal setting and performance management in the public sector. *International Public Management Journal,* 11(4): 385-403.
Lipsky, Martin. 1980. *Street-level Bureaucracy*. New York: 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(3): 385-425.
March, James G. and Johan P. Olsen. 1995. *Rediscovering Institutions: Organizational Bases of Politics*. New York: Free Press.
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, H. H. 1991. A Solution to the Performance Evaluation Feedback Enigma. *Academy of Management Executive*, 5(1): 68–76.
Meyer, H. H, Kay, E. & French, J. R. P. Jr. 1965. Split Roles in Performance Evaluation. *Harvard Business Review*, 43: 123–129.
Moynihan, Donald P. 2005. Goal-based learning and the future of performance management. *Public Administration Review,* 65:203-16.
Moynihan, Donald P. 2008. *The Dynamics of Performance Management: Constructing Information and Reform.* Washington D.C.: Georgetown University Press.
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, D.P., Pandey, S.K. & Wright, B.E. 2009. Pulling the Levers: Leadership, Public Service Motivation and Mission Valence. Presented at the International Public Service Research Conference, Bloomington, IN.
Moynihan, Donald P. and Noel Landuyt. Forthcoming. How do Public Organizations Learn? Bridging Structural and Cultural Divides. *Public Administration Review.*
Newell, Elizabeth. 2009. Management nominee backs performance, accountability measures. June 10. *Government Executive.com.* http://www.govexec.com/story_page.cfm?filepath=/dailyfed/0609/061009e1.htm and oref=search. Accessed: August 12, 2009.
Nunnally, J. C. and I.H. Bernstein. 1994. *Psychometric theory* (Third Ed.). New York: McGraw-Hill.
Pandey, S. K. and B.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(4): 511-532.

Pandey, Sanjay K. and Hal G. Rainey. 2006. Public Managers' Perceptions of Organizational Goal Ambiguity: Analyzing Alternative Models. *International Public Management Journal*. 9(2): 85-112.

Park, S.M. and H.G. Rainey. 2008. Leadership and public service motivation in U.S. federal agencies. *International Public Management Journal*, 11(1): 109-142.

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

Quinn, R.E. & Rohrbaugh, J. 1981. A competing values approach to organizational effectiveness. *Public Productivity Review*, 122-140.

Radin, Beryl. 2006. *Challenging the Performance Movement: Accountability, Complexity, and Democratic Values.* Washington, D.C.: Georgetown University Press.

Rainey, H. G. 1983. Private agencies and private firms: Incentive structures, goals and individual roles. *Administration and Society,* 15(2): 207-242.

Rainey, Hal G., Robert W. Backoff, and Charles L. Levine. 1976. Comparing public and private organizations. *Public Administration Review* 36 (2): 233–46.

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(1): 19-32.

Schein, E.H. 1992. *Organizational culture and leadership.* (Second Ed.). San Francisco: Jossey-Bass.

Shin , S.J. and J. Zhou. 2003. Transformational leadership, conservation, and creativity: Evidence from Korea. *Academy of Management Journal,* 46(6): 703-714.

Sosik, J.J., S.S. Kahai and B.J. Avolio. 1998. Transformational leadership and dimensions of creativity: Motivating idea generation in computer-mediated groups. *Creativity Research Journal,* 11(2): 111-122

Stivers, Camilla. 2008. *Governance in dark times: Practical philosophy in public service.* Georgetown University Press: Washington D.C

Trottier, Tracey, Montgomery Van Wart and XiaoHu Wang. 2008. Examining the nature and significance of leadership in government organizations. *Public Administration Review,* 68(2): 319-333.

Van Dooren, Wouter. 2008. Nothing new under the sun? Change and continuity in twentieth century performance movements. In *Performance information in the public sector: How it is used* (Eds.), Steven Van de Walle and Wouter Van Dooren, 11-23. Houndmills: Palgrave.

Van Wart, M. with P. Suino. 2008. *Leadership in Public Organizations: An Introduction.* NY Armonk: M.E. Sharpe.

Weiss, J. A. 1996. *Public management and psychology*, in D. Kettl & B. Milward (Eds.), The State of Public Management. Baltimore: Johns Hopkins University Press.

Weiss, J. A. and S.K. K. Piderit. 1999. The value of mission statements in public agencies. *Journal of Public Administration Research and Theory* 9(2): 193-223.

Wildavsky, Aaron. 1979. *Speaking truth to power*. Boston: Little, Brown.

Wofford, Jerry C., J. Lee Whittington and Vicki L. Goodwin. 2001. Follower motive patterns as situational moderators for transformational leadership effectiveness. *Journal of Managerial Issues,* 13: 196-211.

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.

Wright, Bradley E. 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.

Wright, B.E. 2007. Public service and motivation: Does mission matter? Public *Administration Review*, 67(1): 54-64.

Wright, Bradley, Donald P. Moynihan, and Sanjay Pandey. 2009. Pulling the levers: Leadership, public service motivation and mission valence. Paper presented at the *International Public Service Motivation Research Conference,* Bloomington, IN, June 7-9.

Wright, B.E. and S.K. Pandey. Forthcoming. Public organizations and mission valence: When does mission matter? *Administration & Society*.

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(5): 625-646.

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

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

Zhou, J. 1998. Feedback valence, feedback style, task autonomy, and achievement orientation: Interactive effects on creative performance. *Journal of Applied Psychology*, 83(2): 261-276.