# THE EFFECT OF THE TASKS MIDDLE MANAGERS PERFORM ON ORGANIZATIONAL PERFORMANCE

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## ABSTRACT

This paper asks: what influence do various middle management tasks have on organizational performance? We identify five tasks: setting clear goals, communication, participative management, human resources management, and resource distribution, and model their separate and combined influence on objective performance measures. Using a dataset of survey and performance data from 2007-2010 on over 250 public schools in Hawaii, findings show that setting clear goals has a positive, significant impact on performance. After combining these tasks into three general management measures (leadership, management, and resource management), results show that the management dimension is significant. This study adds to the public management literature by focusing on the effect of middle management, and specific management tasks, on performance, in a unionized agency.

## INTRODUCTION

The public management literature finds that management matters in a variety of contexts and organizations. Whereas some researchers focus on the impact of overall management on performance, others focus on how effective various behaviors and strategies of top managers are for a variety of organizational outcomes. Specifically, this research on managerial practice finds that experience, promoting change, strategy content, networking, gathering political support, granting and using discretion, and influencing others in the organization are

qualities of good managers, and have a positive affect on performance (Andrews et al. 2006; Donahue, et al. 2004; O'Toole and Meier 2011; O'Toole, et al. 2013).

However, these studies often only focus on one type of managerial practice at one time. For example, researchers find that external networking, or goal clarity, or participative management all influence organizational performance (Akkerman and Torenvlied 2011; Chun and Rainey 2005; Kim 2002), and are usually not examined together in the same analysis. Such a segmented approach may leave us with an incomplete and disjointed picture of how managers affect organizational performance. Exploring the influence of multiple and specific managerial tasks on organizational performance can provide a more complete picture of how managers influence their organization.

This study makes two contributions to the public management literature by focusing on middle managers. First, this study examines the influence of management at the middle level of an organization. Until recently, there have been relatively few empirical studies in the public management literature that focus specifically on middle managers, or the tasks they perform (Brewer 2005; Chen, et al. 2014; Gatenby, et al. 2015; Horne and Lupton 1965; Huy 2002; Morgan, et al. 1996; Wilson 1989, Torenvlied and Akkerman 2012), and their relative importance to organizational performance (Brewer 2005; Floyd and Wooldridge 1997; Johansen 2012). Focusing on mid-level administrators can provide important insights about the management and performance relationship.

Second, we identify five key management tasks (setting clear goals, communication, human resources management, participative management, and resource distribution) that middle managers perform and model their separate influences on objective measures of performance. In addition to their separate effects, we also test the impact of middle management as a whole on performance by empirically creating measures of three management dimensions. Therefore, in this paper we ask: what influence do various management tasks, as performed by mid-level administrators, have on organizational performance?

The rest of the paper proceeds as follows. First, we discuss five management tasks that middle managers perform in an organization, and present a series of hypotheses about the influence of those tasks on performance. We test our hypotheses using survey data of teachers about their principal, and performance data for over 250 public schools over a four year period in Hawaii. Findings reveal that one out of the five management tasks has a significant impact on performance: setting clear goals. Moreover, combining the tasks into three management dimensions (leadership, management, and resource management) reveals that only the management dimension has a significant effect on performance. This study adds to the public management literature by focusing on the effect of middle management, and specific management tasks, on performance, in a unionized agency.

## DEFINING MANAGEMENT AND MANAGEMENT TASKS

There are many definitions of management in the literature. Perhaps one of the earliest attempts at defining management comes from Gulick (1937), who summarized management tasks with POSDCORB, which stands for planning, organizing, staffing, directing, coordinating, reporting and budgeting. Although this is an oversimplification of what managers do, the acronym still provides a useful way of defining what it is managers do. Essentially, management is considered to involve "tasks that deal with complexity: this includes setting goals and plans, solving problems, and monitoring results" (Fernandez, et al. 2010, 308). Traditional management tasks identified in the literature include: setting and communicating clear goals (Rainey, 2003); planning, directing and coordinating the activities of subordinates (Mintzberg 1979); and maintaining clear channels of communication (Barnard 1938). Human resources management is a key management function (Selden 2009; Daley 2006). Recent research discusses the importance of participative management, which includes employee empowerment and shared leadership (Kim 2002). Participative management is an intentional effort by managers to allow

employees lower in the organization to have a greater voice in decision making and planning (Perry, et al. 2006; Glew, et al. 1995).

Research finds that these management tasks, when taken as a whole, influence organizational performance. For instance, work on managerial quality argues that the reason quality public managers influence organizational performance is because of the variety of tasks managers perform (Johansen 2012; Meier and O'Toole 2002). Specifically, quality managers will effectively leverage resources, buffer shocks, set clear goals, and communicate with subordinates and stakeholders (O'Toole and Meier 2011; Wright and Pandey 2009; Akkerman and Torenvlied 2011; Johansen 2012). Although it is often difficult to separate out and model the specific practices that comprise managerial quality, and good management more generally, it is important to do so in order to more fully understand how managers can affect performance.

***Middle Management***

A clearer understanding of the management-performance relationship is also inhibited by the fact that management studies often focus on the higher levels of the organization. This is troubling considering that an administrator's influence on an organization depends on their managerial level (Barnard 1938; Gulick 1937; Johansen 2012; Mintzberg 1979; Walker and Brewer 2008). Mid-level administrators are managers, and the tasks they perform are essential and beneficial to the operation of an organization (Mintzberg 1979; Moynihan and Ingraham 2004; Rainey and Watson 1996; Riccucci 2005; Wilkins 2006; Winter and May 2002).

Relatively few empirical studies have focused specifically on the tasks middle managers perform (Brewer 2005; Chen, et al. 2014; Gatenby, et al. 2015; Horne and Lupton 1965; Huy 2002; Morgan, et al. 1996; Wilson 1989; Torenvlied and Akkerman 2012) and their relative importance to organizational performance (Brewer 2005; Floyd and Wooldridge 1997; Johansen 2012). Research in the private sector finds that middle managers are key strategic actors who are important for organizational performance (Currie and Proctor

2005; Floyd and Wooldridge 1997; Nonaka and Takeuchi 1995; Wooldridge and Floyd 1990). In both public and private organizations, mid-level administrators are the direct supervisors of the workers in their unit and are responsible for the hiring, evaluation, and improvement of those workers (Brewer 2005; Mintzberg 1979; Wilkins 2006). They allocate resources; create budgets, schedules, and reports; and set rules and guidelines for those below them in the organization. They build networks with those higher up in the organization, with other mid-level administrators, and with those outside the organization (Morgan, et al. 1996; Akkerman and Torenvlied 2011). They are responsible for creating a sense of teamwork within the unit, motivating employees (Rainey 2003; Rainey and Watson 1996), and implementing and communicating the policies, missions, and goals of the organization (Lumsden 1982; Rainey and Watson 1996). Focusing on mid-level administrators can provide important insights about the management and performance relationship.

The tasks middle managers perform can positively impact an organization. In order to determine more specifically how managers at the middle may affect an organization, this paper identifies five management tasks they perform and tests their separate and combined impacts on performance.

## MIDDLE MANAGEMENT TASKS AND THEIR IMPACT ON PERFORMANCE

We propose that there are five management tasks middle managers perform that are beneficial to the organization. These are: *Setting clear goals, Communicating with subordinates and stakeholders, Human resources management, Participative management*, and *Resource distribution*. The expectation is that each of these tasks will positively impact organizational performance. In addition to examining the effect of these separate tasks on performance, we also assess how management more broadly defined relates to performance.

Middle managers are responsible for ***Setting clear goals*** and motivating employees (Rainey, 2003). Research finds that conscious and well-specified goals positively affect performance

(Perry, et al. 2006; Rainey and Steinbauer 1999; Rodgers and Hunter 1992; Wilson 1989; Wright 2001) because clear goals allow the organization "to communicate goals easily, develop a mission-oriented culture, and reduce the potential for rival, confusing, and contradictory management systems and actions because of conflicting goals" (Moynihan and Pandey 2005, 427). Thus, we hypothesize,

*Hypothesis 1: Organizations with middle managers who engage more in tasks related to setting clear goals will experience better organizational performance.*

Middle managers are at the nexus of the organization's ***Communication*** system (Barnard 1938; Lynn, et al. 2001; Mintzberg 1979; Rainey and Watson 1996). Communication is essential to an organization (Simon 1948; Barnard 1938). Communication allows managers to discern the different needs and competing values of stakeholders (Quinn and Rohrbaugh 1981), and to address the associated goal ambiguity problems that arise from a public organization's multiple stakeholders (Chun and Rainey 2005). Managers also must be attuned to, and possibly need to manage, potential tensions that may arise between clientele groups who may be competing for the same resources. Essentially, communication allows middle managers to "manage the organization's boundaries and relations with the environment" (Rainey 2003, 84), which is essential for organizational performance. Therefore, we hypothesize,

*Hypothesis 2: Organizations with middle managers who engage in more communication tasks will experience better organizational performance.*

Another function of middle managers is ***Human resources management*** (Brewer 2005; Daley 2006; Mintzberg 1979; Wilkins 2006). Human resources management involves determining how to best fulfill workplace needs, acquiring the necessary people, developing their skills, and motivating and rewarding employees (Ingraham, et al. 2003). Good management of human capital provides the organization with well-trained, qualified, and effective workers, which in turn leads to better performance (Boyne 2003; Brewer and Selden 2000). The way

in which managers direct and organize workers to match the organization's needs also matters (Ingraham, et al. 2003; Donahue, et al. 2000). Managing human capital matters for performance (Selden 2009). As a result, we hypothesize:
*Hypothesis 3: Organizations with middle managers who engage in more human resources management tasks will experience better organizational performance.*

***Participative management,*** or shared decision-making and employee empowerment, by middle managers also affects performance. Managers who involve workers in planning and decision making have higher organizational performance (Fernandez and Moldogaziev 2013a; Peters and Waterman 1982; Osborne and Gaebler 1992), partly because it expands the capacity of the manager to process information by including other workers in the organization in the decision-making process (Andrews and Johansen 2012). Another part of participative management is employee empowerment, which occurs when managers "show concern for [employee] well being, appreciate and recognize their work... and provide them with opportunities for personal growth" (Fernandez, et al. 2010, 311). Participative management leads to higher satisfaction with organizational processes and decisions (Kim 2002). It affects performance by improving worker motivation and job satisfaction (Fernandez and Moldogaziev 2013a, 2015; Kim 2002; Selden 2009). Consequently, we hypothesize,
*Hypothesis 4: Organizations with middle managers who engage in more participative management tasks will experience better organizational performance.*

Middle managers are also responsible for ***Resource distribution*** (Gulick 1937; Mintzberg 1979; Donahue, et al. 2004). The effective distribution of resources across the organization impacts performance because it ensures that workers have the necessary tools to do their jobs well, and maximizes the limited resources of the organization.
*Hypothesis 5: Organizations with middle managers who engage in more resource distribution tasks will experience better organizational performance.*

In addition to looking at the effect of these individual management tasks on performance, it is important to consider that these tasks may have a greater effect when performed together. Specifically, managers are effective because of how they perform *all* of their tasks as a public manager. In other words, setting clear goals may not be effective unless it also includes communicating those goals and sharing in decision making with workers. Thus, we hypothesize that even if the five tasks separately do not have a direct impact, when performed together, managers will have an impact.

*Hypothesis 6: Organizations with middle managers who have a higher level of engagement in management tasks will experience better organizational performance.*

## DATA

This aim of this paper is to explore the influence that various management tasks have on organizational performance. In addition, we also explore the impact of the general management practice of mid-level administrators. We do so with a dataset of over 250 public schools[3] in Hawaii from 2007-2010. Hawaii has over 180,000 students and over 1,000 teachers. There is one superintendent for the whole state and district, and 15 assistant superintendents are responsible for all of the schools in a specific geographic area. Hawaii has one of the most diverse student populations in the United States, both in terms of race and ethnicity, and rural and urban locations.

Hawaii is an ideal case in which to study this question for several reasons. First, teachers in each public school across the state are surveyed each winter by the Hawaii Department of Education about a variety of things relating to their school, such as the quality of their school and its facilities, the availability of resources, parent-teacher interactions, and state curriculum requirements. A large portion of this survey asks teachers about

[3] There are approximately 250 Hawaii public schools in our data. Listwise deletion of cases with missing data produces 164 usable cases (163 in 2007). There are not large differences between the cases included and excluded from the analysis in terms of basic demographic and performance characteristics.

the principal at their school. It is from this portion of the survey that we obtained our measures of management tasks. The survey data is aggregated at the school level. The average response rate for the survey is 76.5%.

Second, performance data are available for each school for multiple years, which allows for an estimation of the impact of mid-level administrators on performance. Third, Hawaii's public school system is unionized, which mirrors federal and many state agencies. Thus, in focusing on Hawaii, we have objective performance measures at the school level, measures about the managerial practice of school principals, and a realistic context in which to study the influence of management on performance.

***Dependent Variables***

School performance is assessed with two objective measures that are commonly used in the public management literature, performance on the state standardized test. Test scores are extremely salient in Hawaii; each school's scores are widely reported in the news, and parents make decisions about where to send their children to school based on these scores (although see Schneider, et al. 1998; Friedman, et al. 2006; Favero and Meier 2013). They are also used by the superintendent and school principals to make decisions about school staffing, budgets, and operations. These performance measures are the average student scores on the reading and math portions of the state test for each school. Test scores vary considerably and tend to be left skewed with some schools performing very poorly. The average test score was 273 (median 294) for math and 284 (305 median) for reading. Table 1 presents the descriptive statistics for all variables used in the analysis.

**Table 1**
***Descriptive Statistics***

| | Mean | SD | Min | Max |
|---|---|---|---|---|
| *Survey Items* | | | | |
| Our environment promotes learning | 4.15 | 0.41 | 2.26 | 5 |
| Our school has high standards-based performance expectations | 4.19 | 0.38 | 2.82 | 5 |
| Our school keeps our community stakeholders informed | 3.88 | 0.49 | 2 | 5 |
| Our school clearly communicates its goals to staff, parents, and students | 4.01 | 0.39 | 2.77 | 5 |
| Staff development at our school is relevant to standards-based education | 3.99 | 0.44 | 2.25 | 5 |
| Staff development at our school promotes student achievement | 4.05 | 0.40 | 2.67 | 5 |
| Teachers have a major role in standards-based curriculum development | 4.12 | 0.37 | 2.73 | 5 |
| Decisions on instructional practices are coordinated school-wide | 3.69 | 0.47 | 2.00 | 5 |
| I have access to the technology I need to teach effectively | 3.97 | 0.43 | 2.45 | 5 |
| There are enough resources available to sustain its educational programs | 3.00 | 0.62 | 1.46 | 5 |
| Staff are encouraged to enhance their personal and professional skills | 3.98 | 0.44 | 2.46 | 5 |
| Teachers are assigned to teach the subjects for which they are qualified | 4.22 | 0.39 | 2.92 | 5 |
| I can freely express my opinions or concerns to the administrators | 3.87 | 0.50 | 2.25 | 5 |
| There is open communication among administrators/teachers/staff/parents | 3.72 | 0.52 | 1.77 | 5 |
| Administrators/teachers/staff work together to achieve our goals | 3.89 | 0.48 | 1.96 | 5 |
| Teachers are given opportunities to plan and help make decisions | 3.86 | 0.47 | 2.47 | 5 |
| Administrators, teachers, and other staff treat each other with respect | 3.94 | 0.47 | 2.19 | 5 |
| *Factor Scores* | | | | |
| Setting Clear Goals | 0 | 0.87 | -4.39 | 0.88 |
| Communication | 0 | 0.91 | -2.96 | 1.39 |
| Human Resources Management | 0 | 0.92 | -2.94 | 1.29 |
| Participative Management | 0 | 0.96 | -3.50 | 1.58 |

**Table 1, continued**

| | | | | |
|---|---|---|---|---|
| Resource Distribution | 0 | 0.67 | -1.65 | 1.56 |
| Leadership (Factor 1) | 0 | 1 | -3.87 | 2.11 |
| Management (Factor 2) | 0 | 1 | -3.92 | 2.42 |
| Resource Management (Factor 3) | 0 | 1 | -3.63 | 2.66 |
| *Dependent Variables* | | | | |
| Average Math Score - All Students | 272.57 | 72.96 | 0.00 | 328.7 |
| Average Reading Score - All Students | 283.73 | 74.41 | 0.00 | 339.2 |
| *Control Variables* | | | | |
| % Students Receiving Free Or Reduced Lunch | 43.03 | 21.11 | 1.80 | 98.10 |
| % Students With Limited English Proficiency | 11.56 | 10.91 | 0.00 | 56.20 |
| % Teachers That Are Fully Licensed | 92.83 | 8.61 | 55.56 | 117.95 |
| % Teachers With Advanced Degrees | 30.68 | 9.70 | 5.41 | 62.96 |
| Teachers' Average Years Of Experience | 11.94 | 2.51 | 1.60 | 19.10 |
| Total State Funds Expended Per Pupil (in $1000s) | 68.62 | 67.80 | 14.11 | 1632.3 |
| Number Of Average Daily Absences | 10.21 | 4.56 | 3.40 | 40.60 |
| Total Enrollment (in 100s) | 7.12 | 5.04 | 0.63 | 26.39 |

Note: Descriptive statistics based on 165 schools from 2007-2010 used in the regression analysis (N = 655).

### *Independent Variables*

*Management tasks.* As mentioned above, we examine the role of management in two ways by considering specific tasks as well as developing overall measures of management. In the first analysis, we develop five task-oriented measures discussed above by placing a total of 17 survey items into five categories, namely *Setting clear goals*, *Communication*, *Human resources management*, *Participative management,* and *Resource distribution*. We then perform a factor analysis on the responses for each set of survey prompts to create the measures of the five management tasks. The factor scores have a mean of zero and a standard deviation near one. Positive values indicate more than average engagement in the management task, and negative

values indicate less than average engagement in the management task.

For *Setting Clear Goals*, we use two survey questions that ask how much teachers agree with the following statements: "Our school promotes learning" and "Our school has high standards-based performance expectations for all students". These questions are valid measures of *Setting clear goals* given that many public schools in Hawaii place their focus on non-academic activities, such as athletics, healthy behaviors, sexual education, and career training as ways to reduce discipline problems, truancy, and to keep kids off the streets and out of trouble until parents return home. This is a particularly challenging task, as teachers and principals deal with a great diversity of cultures in the student body. Agreement about the importance of academic performance, or organizational outcomes, sends a strong, clear signal about the goal of the principal, and indicates that the principal has succeeded in clearly articulating goals for the school. The range of this measure ranges from -4.4 to 0.882, revealing that the measure is unbalanced. There is much more variation in managers engaging in less than average amounts of setting clear goals. Above average engagement in setting clear goals only occurs at a level that is one standard deviation above the mean.

For *Communication*, we use the responses to three survey prompts: "There is open communication among administrators, teachers, other staff, and parents", "Our school keeps our community stakeholders informed of what goes on at the school", and "Our school clearly communicates its goals to staff, parents, and students". This measure ranges from -2.96 to 1.60.

For *Human Resources Management*, we use responses to these four prompts: "Staff development at our school is relevant to standards-based education", "Teachers are generally assigned to teach the subjects they are qualified for", "Staff are encouraged to enhance their personal and professional skills" and "Staff development at our school promotes student achievement." This measures ranges from -2.84 to 2.57.

Five survey responses comprise our measure of *Participative Management*: "Administrators, teachers, and staff

work together effectively to achieve our goals", "Decisions on instructional practices are coordinated school-wide", "Teachers are given opportunities to plan and help make decisions about matters that affect them", and "Teachers have a major role in standards-based curriculum development in our school." For the employee empowerment aspect of participative management, we use responses to the following prompt: "Administrators, teachers, and other staff treat each other with respect" and "I can freely express my opinions or concerns to the principal". The values of this measure range from -2.9 to 2.57.

The final task, *Resource Distribution*, is measured with the responses to two prompts: "I have access to the technology I need to teach effectively" and "There are enough resources available to the school to sustain its educational programs." This measure ranges from -1.68 to 1.59.

***Dimensions of Management***

To empirically place these survey items into an overall measure of management, we performed a principal components factor analysis on the 17 survey items presented in Table 2. Principal components factor analysis is a variable reduction technique that allows one to capture a small number of unique components contained within a larger set of variables or items (Spencer 1992).[4] This then allows us to create composite scores for different dimensions or factors of management tasks from the 17 individual survey items. These scores capture the extent to which the individual items covary. According to the factor loadings in Table 2, we find that there are three dimensions of management. The items are primarily split between the first two factors: five items clearly focus on questions relating to trust, respect, communication and openness. These are the basis for the first factor. The second factor primarily consists of items that focus on issues relating to decision-making, curricula, and standards and achievement. Two items – communication with staff, parents and students, and including teachers in curriculum

[4] We use principal components factor analysis because we are interested in developing unique and uncorrelated dimensions from these items. That said, exploratory factor analysis produces similar factor loadings for the items and similar empirical results when used in the regression models.

decisions – load similarly in both factors. We term the first dimension (factor 1), *Leadership* and the second dimension (factor 2), *Management*.

The third dimension has fewer items, and includes items that relate to communication with external stakeholders, assigning teachers to classes, and the two resource-related items (technology and educational resources). Good communication with external stakeholders can be important in securing and retaining support and resources. Similarly, assigning teachers to teach in subjects for which they are qualified is arguably a resource management/allocation issue. Thus, we term the third dimension *Resource Management* since each item relates to resources, albeit in different ways.

**Table 2**
***Factor Loadings from Factor Analysis***

| Survey Item | Factor 1 | Factor 2 | Factor 3 | Uniqueness |
|---|---|---|---|---|
| | Leader-ship | Mgmt | Resource Mgmt | |
| ***Setting Clear Goals*** | | | | |
| Our environment promotes learning. | 0.333 | 0.765 | 0.182 | 0.271 |
| Our school has high standards-based performance expectations for all students. | 0.155 | 0.805 | 0.253 | 0.264 |
| ***Communication*** | | | | |
| Our school keeps our community stakeholders informed of what goes on at the school. | 0.342 | 0.245 | 0.766 | 0.236 |
| Our school clearly communicates its goals to staff, parents, and students. | 0.557 | 0.543 | 0.422 | 0.218 |
| There is open communication among administrators, teachers, other staff, and parents. | 0.858 | 0.305 | 0.246 | 0.110 |
| ***Human Resources Management*** | | | | |
| Staff development at our school is relevant to standards-based education. | 0.495 | 0.763 | 0.061 | 0.169 |

| | | | | |
|---|---|---|---|---|
| Staff development at our school promotes student achievement. | 0.435 | 0.637 | 0.296 | 0.318 |
| Teachers are assigned to teach the subjects for which they are qualified. | 0.258 | 0.038 | 0.817 | 0.265 |
| Staff are encouraged to enhance their personal and professional skills. | 0.516 | 0.671 | -0.155 | 0.260 |
| ***Participative Management*** | | | | |
| I can freely express my opinions or concerns to the administrators | 0.846 | 0.220 | 0.220 | 0.187 |
| Administrators, teachers, and other staff treat each other with respect. | 0.836 | 0.198 | 0.180 | 0.230 |
| Teachers have a major role in standards-based curriculum development in our school. | 0.501 | 0.521 | 0.271 | 0.405 |
| Decisions on instructional practices are coordinated school-wide. | 0.456 | 0.640 | 0.364 | 0.250 |
| Teachers are given opportunities to plan and help make decisions about matters that affect them | 0.716 | 0.395 | 0.277 | 0.255 |
| Administrators, teachers, and staff work together effectively to achieve our school's goals. | 0.767 | 0.472 | 0.250 | 0.127 |
| ***Resources*** | | | | |
| I have access to the technology I need to teach effectively. | 0.135 | 0.441 | 0.515 | 0.522 |
| There are enough resources available to the school to sustain its educational programs | 0.278 | 0.432 | 0.404 | 0.573 |
| Eigenvalue: | 9.969 | 1.274 | 1.098 | |
| Proportion: | 0.586 | 0.075 | 0.065 | |
| Principal Components Factor Analysis. Orthogonal Rotated Factor Loadings. Cronbach's Alpha from all items = 0.953 | | | | |

***Control Variables***

For this analysis, we control for several factors; broadly, these are school resources, teacher characteristics, and school/student characteristics. In terms of resources, we control for the total per pupil state funds schools receive measured in

$1000s. We expect that schools that receive more funds will, on average, perform better that those with fewer resources. To capture teacher characteristics we include three measures meant to assess teacher quality: the percent of teachers that are fully licensed, the percent who have advanced degrees (i.e. higher than a bachelor's degree), and the average number of years of teaching experience for teachers within each school. These are all expected to be positively associated with student performance. Since all schools in Hawaii are unionized, we do not include a control for unions.

Finally, we control for student and school characteristics. We control for the percentage of low-income students, measured by those who qualify for free or reduced lunch, and the percent of students with limited English proficiency (LEP). These measures tend to be negatively associated with performance. Finally, we also include two structural/student variables, school size (measured by total enrollment), and the number of average daily absences. Both are expected to be negatively related to performance.

## RESULTS

Tables 3 and 4 present the results from the regression analysis. The tables first present results from OLS regression models with robust standard errors followed by results using random effects models. Since these are time series panel data, the random effects models better accounts for the structure of these data.[5]

The results in Table 3 present mixed findings for the relationship between management tasks and reading and math performance. *Setting clear goals* is positive and statistically significant in both the OLS and random effects models for both dependent variables, providing support for Hypothesis 1. The magnitude of the relationship is modest, however, where a one standard deviation increase in *Setting clear goals* is associated with a 10-11 point increase (using estimates from the random

[5] Since we are interested in explaining variation between cases rather than within cases, random effects is superior to fixed effects on theoretical grounds (see Zhu 2013).

effects models) in reading and math average scores, respectively. Alternatively, a five-point difference increase (essentially the full range of the variable) is associated with about a 60-65 point increase in test scores, or nearly one standard deviation in the dependent variable. The *Communication* and *Resource distribution* variables are statistically significant in the OLS models, but not the random effects models. This provides limited support for Hypothesis 5, but runs counter to Hypothesis 2 since the sign of the coefficient is not in the predicted direction. This suggests that schools with managers who focus their efforts on communication with staff, parents, and the community may actually witness poorer performance on test scores, all else being equal.[6] Alternatively, those schools that have managers who focus on resource distribution tasks are expected to see improved scores. That said, these results are only significant in the OLS models.

Several of the control variables are significant. These include the percentage of students who receive free or reduced lunch, the percentage of students who are LEP, the percentage of fully licensed teachers, per student spending, the average number of daily absences, and student enrollment. Each of these control variables has a negative impact on performance.

[6] There is also the possibility that the relationship is endogenous, where schools with lower performance require managers to engage in more communication tasks as a result of poor performance. This is not tested in this paper, but future research should consider this possibility.

**Table 3**
***The Impact of Management Tasks on Performance***

| | Reading Scores | | Math Scores | |
|---|---|---|---|---|
| | OLS (Robust SE) | Random Effects | OLS (Robust SE) | Random Effects |
| Setting Clear Goals | 10.131* | 12.197** | 11.450** | 13.051*** |
| | (5.226) | (5.349) | (4.853) | (4.992) |
| Communication | -10.732* | -8.477 | -10.602* | -7.837 |
| | (6.178) | (6.443) | (5.821) | (6.003) |
| Human Resources Mgmt | 5.594 | 8.243 | 4.343 | 7.044 |
| | (5.055) | (5.578) | (4.723) | (5.196) |
| Partic. Mgmt | -1.508 | -4.568 | -1.259 | -4.324 |
| | (5.441) | (6.791) | (5.105) | (6.345) |
| Resource Distribution | 6.594* | 3.625 | 6.331* | 2.592 |
| | (3.775) | (5.258) | (3.571) | (4.944) |
| *Control Variables* | | | | |
| % Students Receiving Free Or Reduced Lunch | 0.592*** | 0.529** | 0.593*** | 0.503** |
| | (0.198) | (0.225) | (0.185) | (0.217) |
| % Students W/Limited English Proficiency | -1.446*** | -1.374*** | -1.263*** | -1.169*** |
| | (0.341) | (0.389) | (0.330) | (0.376) |
| % Teachers Fully Licensed | 0.757** | 1.187*** | 0.764** | 1.200*** |
| | (0.363) | (0.392) | (0.339) | (0.367) |
| % Teachers Advanced Degrees | -0.445*** | -0.390 | -0.494*** | -0.415 |
| | (0.166) | (0.321) | (0.161) | (0.309) |
| Teachers' Avg. Yrs Experience | -0.440 | -0.532 | -0.746 | -0.778 |
| | (0.991) | (1.397) | (0.944) | (1.341) |
| Total State Funds Expended Per Pupil ($1000s) | -0.110* | -0.084** | -0.101* | -0.069* |
| | (0.060) | (0.038) | (0.053) | (0.035) |
| Number Avg Daily Absences | -4.126*** | -2.984*** | -4.226*** | -2.907*** |
| | (1.184) | (0.916) | (1.102) | (0.869) |
| Total Enrollment (in 100s) | -4.672*** | -4.732*** | -4.903*** | -5.045*** |
| | (1.077) | (0.764) | (0.990) | (0.743) |
| Constant | 307.589*** | 256.04*** | 300.69*** | 246.41*** |
| | (36.589) | (37.051) | (33.991) | (34.915) |
| Total Obs | 655 | 655 | 655 | 655 |
| R-squared (Overall) | 0.316 | 0.311 | 0.356 | 0.349 |
| Within | | 0.070 | | 0.068 |
| Between | | 0.493 | | 0.522 |

Note: Random effects were estimated with the xtreg command in Stata.
Models based on data from 164 schools from 2007-2010.
Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4 presents the OLS results for the models including the three management dimensions, *Leadership*, *Management*, and *Resource management* developed from the principal components factor analysis of the 17 survey items. Looking at the models in Table 4, we see that *Management* is positive and significant for both math and reading test scores. *Leadership* and *Resource Management* have a negative, albeit insignificant, effect on performance.[7]

The substantive effects of *Management*, while not particularly large, are not trivial. A one-standard deviation increase in management is associated with about a 9-point increase in average test scores, or about $1/8^{th}$ of a standard deviation in the dependent variable, holding all else constant. Increasing management by its full range (6.34) increases test scores by about 60 points. This effect may be greater over time since these are only the short-term effects; the magnitude of the full effects will be compounded and realized over time.

In regards to the control variables, surprisingly, the percentage of low-income students has a positive, significant effect on performance. The percentage of students with limited English proficiency, the percentage of teachers with advanced degrees, per pupil expenditures, the average number of daily absences, and total student enrollment have a negative, significant effect on math and reading scores. The percentage of teachers who are fully licensed was positively related to both math and reading scores.

[7] The *Resource management* (Factor 3) variable is statistically significant when management (Factor 2) is excluded from the models. Tests for multicollinearity did not indicate any problems.

**Table 4**
***The Influence of Management Tasks on Performance***

| | Reading Scores | | Math Scores | |
|---|---|---|---|---|
| | OLS (Robust SE) | Random Effects | OLS (Robust SE) | Random Effects |
| Leadership (Factor 1) | -1.170 (1.932) | -0.810 (2.664) | -1.362 (1.848) | -0.803 (2.505) |
| Mmgt (Factor 2) | 9.183** (3.743) | 9.681*** (3.264) | 9.222*** (3.527) | 9.223*** (3.076) |
| Resource Mgmt (Factor 3) | -3.120 (2.506) | -2.236 (2.723) | -2.980 (2.373) | -2.164 (2.538) |
| *Control Variables* | | | | |
| % Students Receiving Free Or Reduced Lunch | 0.554*** (0.200) | 0.503** (0.225) | 0.557*** (0.188) | 0.478** (0.217) |
| % Students W/Limited English Proficiency | -1.412*** (0.338) | -1.365*** (0.384) | -1.240*** (0.328) | -1.170*** (0.372) |
| % Teachers Fully Licensed | 0.771** (0.363) | 1.247*** (0.389) | 0.777** (0.339) | 1.255*** (0.364) |
| % Teachers With Advanced Degrees | -0.467*** (0.168) | -0.410 (0.319) | -0.518*** (0.163) | -0.437 (0.308) |
| Teachers' Avg Yrs Exp | -0.559 (0.970) | -0.610 (1.392) | -0.887 (0.921) | -0.848 (1.337) |
| Total State Funds Expended Per Pupil ($1000s) | -0.108* (0.060) | -0.088** (0.038) | -0.100* (0.053) | -0.074** (0.035) |
| Number Avg Daily Absences | -4.275*** (1.205) | -3.191*** (0.896) | -4.439*** (1.122) | -3.163*** (0.853) |
| Total Enrollmnt (in 100s) | -4.672*** (1.074) | -4.807*** (0.772) | -4.906*** (0.987) | -5.147*** (0.749) |
| Constant | 311.0*** (36.222) | 255.9*** (36.554) | 305.2*** (33.656) | 247.5*** (34.433) |
| Total Obs | 655 | 655 | 655 | 655 |
| R-sqrd (Overall)<br>Within<br>Between | 0.317 | 0.313<br>0.062<br>0.502 | 0.357 | 0.351<br>0.061<br>0.530 |

Note: Random effects were estimated with the xtreg command in Stata. Models based on data from 164 schools from 2007-2010.
Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

## DISCUSSION AND CONCLUSIONS

In order to answer the question posed in this study: what influence do various management tasks, as performed by mid-level administrators, have on organizational performance?, we identified five tasks: setting clear goals, communication, human resources management, participative management, and resource distribution; and modeled their influence on objective measures of performance. Findings reveal that setting clear goals has a significant and positive impact on performance. When these tasks are combined into three general measures of management dimensions, we find that the management dimension, but not the leadership or resource management dimensions, has a positive and non-trivial impact on both performance indicators.

Before proceeding it is important that we note the limitations of this study. First, this study does not take into account the influence that managers higher up in the hierarchy may have on the mid-level administrators in this study, or the respondents to the survey. Second, the survey questions do not directly ask about management. Rather, the perceptual measures are about the work environment. Lastly, this study does not include in the model the individual characteristics of principals that may influence perceptions of management such as age, experience, and gender.

Despite these limitations, the findings from our modeling efforts represent an important addition to the research on public management. First, we model the separate impacts of management tasks on organizational performance. Public management scholars often focus on the impact of one management task on performance. This study examines the impact of five management tasks in one model predicting performance. Second, this is one of the few empirical studies that focuses on the tasks of middle managers and their impact on organizational performance. The management literature focuses heavily on the impact of top managers on performance. From the results of this study, it appears that middle management in general, and goal clarity specifically, matters for performance.

Third, we empirically find three dimensions of management, management, leadership and resource

management, and find that the general management dimension is important for performance. These results are surprising given that researchers often find a positive relationship between leadership and performance (Andrews and Boyne 2010; Bellé 2014; Fernandez, et al. 2010; Moynihan, et al. 2011). One reason that may explain the difference in our results from other leadership studies is that we are looking at the local level, whereas many leadership studies focus on the federal bureaucracy. Also, studies at the more local level measure leadership directly by asking for worker perceptions of their supervisor's leadership ability. We do not have such a direct measure of leadership, and instead focus on questions that may be related to leadership.

Perhaps the most likely reason is that some of the tasks that fall in the management dimension are often considered leadership tasks in the leadership literature. For example, our measures for setting clear goals and resource distribution fall strictly in the management dimension even though they may also be considered leadership tasks in the literature (Andrews and Boyne 2010; Fernandez 2005; Fernandez, et al. 2010; Moynihan, et al. 2011). Moreover, we find that some leadership tasks fall in both the management and leadership dimensions, whereas others are strictly in one dimension. For example, communication and participative management fall in both the management and leadership dimensions. This supports the research that calls them management tasks (Meier and O'Toole 2003; Kim 2002), while also supporting the research that calls them leadership tasks (Fernandez 2005). These findings challenge our understanding and conceptualization of management and leadership, and highlight the need for further "un-blurring" of our understanding of management and leadership.

Lastly, this study examines the impact of management in a unionized state agency that places constraints on managers. A large portion of the public management research using Texas School District data does not (e.g. O'Toole and Meier 2011), and as a result we do not know how much managers really can do when they are heavily constrained, which occurs in organizations and states that are strongly unionized. Our findings reveal that even in a heavily constrained environment, middle managers can

still have a positive impact on the performance of their organization (see also Moe 2009; Nicholson-Crotty, et al. 2012).

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