

SHOULD I STAY OR SHOULD I GO?
TURNOVER AMONG PUBLIC SCHOOL TEACHERS AND PRINCIPALS

By

John D. Marvel

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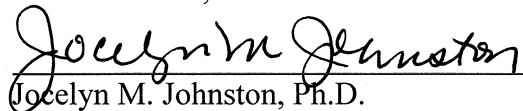
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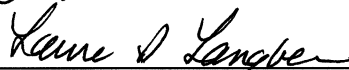
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David W. Pitts, Ph.D.



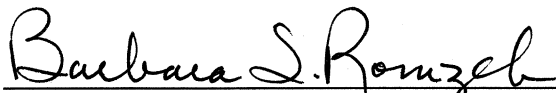
Jocelyn M. Johnston, Ph.D.



Laura I. Langbein, Ph.D.



Sergio Fernandez, Ph.D.



Dean of the School of Public Affairs

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To Shauna

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ABSTRACT

This dissertation uses data on public school teachers and principals to address three related research questions: 1. How do the predictors of turnover intention and actual turnover differ? 2. How do managerial constraints—in particular, constraints on public managers' ability to dismiss poorly performing employees—affect managers' turnover intentions and actual turnover decisions? 3. How do policymakers' efforts to induce bureaucrats' compliance with formal policy goals affect bureaucrats' turnover intentions? The dissertation comprises five chapters—an introduction, three empirical analyses (each of which will address one of the research questions listed above), and a conclusion. The first two empirical chapters use nationally representative, large-N data and non-experimental research designs to address their respective empirical questions. The third empirical chapter uses information collected from 12 semi-structured interviews with current and former public school teachers in the Washington, DC metropolitan area.

Below, I begin with a discussion of why public employee turnover deserves analytical attention. The simplest justification for the dissertation is that turnover is costly to organizations, making the identification of its antecedents a worthwhile exercise. In my first empirical chapter, I illustrate how the use of turnover intention as a proxy for actual turnover in large-N research can produce misleading public management prescriptions. I do this using nationally representative data on public school teachers. In the dissertation's second empirical chapter, I transition to a focus on public school principals. Given that public school principals constitute a

large class of public managers, it is useful to make them the focus of an analysis that tests whether managerial constraints are associated with managerial turnover decisions. Finally, in the dissertation's third empirical chapter, I narrow my analytical focus to teachers in the Washington, DC, public school system in order to more deeply explore the reasons underlying public sector employees' turnover behavior. I conclude with a discussion of the dissertation's implications for public management theory and public management prescription.

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My committee members—Laura Langbein, Jocelyn Johnston, and Sergio Fernandez—provided invaluable feedback as the dissertation evolved. Though not on my committee, Bob Durant has always been ready with good counsel and moral support. I've been extremely fortunate to have Laura, Jocelyn, and Bob in my corner. They've all been very good to me, and for that I'll always be grateful.

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Early and often, my parents emphasized the importance of education. If not for them, I wouldn't be where I am today. Their contributions to my success are immeasurable.

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CHAPTER 1

TURNOVER: COSTS AND CONSEQUENCES

In the United States, public employee turnover has been and continues to be a concern at all levels of government. In 1989, the National Commission on the Public Service (the Volcker Commission) warned of a "quiet crisis" in the federal civil service. The Commission worried that low pay (relative to the private sector), strident anti-bureaucracy political rhetoric, and growing public distrust in the federal government were making the prospect of working in (or staying in) the public service increasingly undesirable (National Commission on the Public Service, 1989). More recently, scholars and interested parties from outside the academy have expressed similar anxieties (Garrett et al., 2006; Terry, 1997; Light, 1999, 2002, 2008a, 2008b; National Commission on the Public Service, 2003; Soni, 2004; Volcker, 2009). Light (2008a), for instance, contends that the "quiet crisis" of the 1980s has become "deafening," arguing that today's federal workforce is "beleaguered" and, moreover, that interest in the federal service is declining among young Americans (413, 416).¹ Accompanying concerns about current workers' job satisfaction and low interest among the young is the prospect of the federal workforce suffering a "brain drain" due to an imminent wave of retirements (Partnership for Public Service, 2008). The Office of Personnel Management (OPM) projects that by 2012, 36% of the Senior Executive Service and 27% of supervisory-level workers will retire (Partnership for Public Service, 2008). These projections underscore the importance of not only attracting a new crop of qualified individuals to replenish the federal service, but also of retaining existing talent.

¹ In related research, Chetkovich (2003) uses data on a sample of policy graduate students (MPP students) from Harvard to suggest that preferences for government work versus private sector work tend to shift toward private sector work during graduate school.

Turnover is an issue at the state and local levels as well. State-level data collected by the Pew Center on the States indicate that between 2003 and 2006, the average voluntary turnover rate for state executive branch employees increased from 6.3% to 7.4% (Selden, 2010). Turnover among the subset of new hires also rose, from an average rate of 20.4% in 2003 to 22.7% in 2006, with eight states reporting new hire turnover rates of 30% or more. Like the federal government, many of the individual states face the prospect of an impending worker exodus—23 states report that by 2011, 25% or more of their employees will be eligible for retirement. While data on local government turnover rates are harder to come by,² data on public school teachers suggest that for at least one class of local government employees, turnover is an important issue. Since the late 1980s, public school teacher "movers" and "leavers"—respectively, teachers moving from one school to another and teachers leaving the profession entirely—have constituted around 12% to 15% of the total public sector teaching workforce (Keigher, 2010).

Employee turnover is a serious human resources issue for public (and private) organizations because it entails potentially high costs—both direct and indirect. Direct costs include the time and money organizations spend recruiting and training suitable replacements for departed employees (Dolfin, 2006). Indirect costs can include decreases in employee morale (Rainey, 2009), outflows of social and intellectual capital (Shaw et al., 2005a), and drops in organizational performance (O'Toole and Meier, 2003)³. Estimates seem to converge on a

² The Bureau of Labor Statistics collects data on government turnover rates, but to my knowledge, local government (i.e., city or town) turnover rates are not available on their website.

³ The relationship between employee turnover and organizational performance is not clear cut. While some empirical evidence suggests a negative relationship (e.g., O'Toole and Meier, 2003; Meier and Hicklin, 2008), other evidence suggests that the relationship may be nonlinear (e.g., Shaw et al., 2005b). Dalton et al. (1982) and Abelson and Baysinger (1984) argue that some moderate amount of turnover should be considered "functional" because it can be a remedy for organizational stagnancy. Interestingly, arguments of this sort appear earlier on in the public administration literature (Mosher and Kingsley, 1936; Stahl, 1962).

general conclusion that turnover is costly, but they vary substantially as to just how costly it can be. Focusing on private sector turnover, for instance, Schlesinger and Heskett (1991) claim that the transactional and service disruption costs resulting from an employee leaving an organization can be as high as 150% of the employee's annual salary. Owing to methodological differences, studies have estimated the turnover cost of a registered nurse to be as low as \$20,000 and as high as \$64,000 (Jones and Gates, 2007). With respect to public school teachers, the National Commission on Teaching and America's Future (NCTAF) estimated the cost of turnover to be \$17,872 per leaver in the Chicago public school system (Barnes et al., 2007). Other estimates of teacher turnover costs range from \$12,546 (Alliance for Excellent Education, 2005) to \$52,513 per departed teacher (Texas Center for Educational Research, 2000). These figures underscore the point made by nearly every study of employee turnover—that its considerable costs make it a topic worthy of attention.

My dissertation uses data on public school teachers and principals to address three related research questions: 1. How do the predictors of turnover intention and actual turnover differ? 2. How do managerial constraints—in particular, constraints on public managers' ability to dismiss poorly performing employees—affect managers' turnover intentions and actual turnover decisions? 3. How do policymakers' efforts to induce bureaucrats' compliance with formal policy goals affect bureaucrats' turnover intentions? The dissertation will comprise five chapters—an introduction, three empirical analyses (each of which will address one of the research questions listed above), and a conclusion. The first two empirical chapters use nationally representative, large-N data and non-experimental research designs to address their respective empirical questions. The third empirical chapter uses information collected from 12

semi-structured interviews with current and former public school teachers in the Washington, DC metropolitan area.

Turnover in the Context of Public Schools

As noted above, this dissertation will examine turnover in the context of public schools, the most common type of public organization in the United States (Meier and Bohte, 2003). Turnover is an especially important issue in schools, which are organizations characterized by "uncertain and nonroutine technologies and production processes" (Ingersoll, 2001, p. 505; Bidwell, 1965; Ingersoll, 1993; Lortie, 1975). Though there is disagreement in the education literature on how to classify schools as organizations (Ingersoll, 1993), it is reasonable to portray them as professional organizations in which teachers (front-line employees) have substantial amounts of discretion (Meier and Bohte, 2003). Owing to this discretion, public administration scholars typically characterize schools as street-level bureaucracies (Lipsky, 1980; Maynard-Moody and Musheno, 2003). Principals (public managers) not only perform internal management functions (e.g., managing personnel), but also external management functions (e.g., mediating between top management and front-line employees). They are constrained from above (by upper-level managers and political officials) and from below (since teachers have discretion and expertise, principals must grant them some measure of deference). The performance of their schools depends to a great degree on the performance of their subordinates, who can thwart their managerial efforts (Lipsky, 1980; Brehm and Gates, 1997).

Public managers in other public organizations perform similar functions and deal with similar constraints. The average manager at a federal or state agency will oversee a group of employees who have some degree of discretion in delivering public services and on whose individual efforts group performance will depend. She (or he) will have trouble getting her

subordinates to do what she wants them to do (Brehm and Gates, 1997). She will mediate between upper-level management and the members of her work group. Given these similarities between schools and other types of public organizations, it is reasonable to expect that findings about turnover in schools can inform the broader literature on turnover in public organizations.

Teachers

Empirical evidence suggests that beginning teachers are less effective than their more experienced peers (Clotfelter et al., 2006; Rockoff, 2004; Nye et al., 2004). Rockoff (2004), for instance, shows that reading test scores of students of new teachers are, on average, about 0.17 standard deviations lower than the reading test scores of students having teachers with ten or more years of experience.⁴ Similarly, Nye et al. (2004) show that 2nd and 3rd grade students of teachers having three or more years of experience tend to do better on standardized reading and math tests than students of beginning teachers.⁵ Results like this point to the importance of retaining beginning teachers in order to eventually capitalize on any gains from experience. They also underscore the importance of retaining veteran teachers so that any existing experience effects are maintained.

Education policy scholars are not alone in emphasizing the importance of teacher experience to student and school performance; public administrationists have also highlighted this linkage. O'Toole and Meier (2003), for instance, stress that teachers are a particular type of street-level bureaucrat—a class of workers who must, in general, deal with considerable novelty

⁴ Rockoff (2004) uses data on elementary school students from two New Jersey school districts. His estimates are highly credible given that he uses student-level panel data with student, teacher, and school-year fixed effects. In general, the research designs seen in these papers are strong.

⁵ All of these studies assume that the effect of teacher experience on student achievement will be nonlinear. Consequently, the studies recode continuous measures of experience into categorical variables (e.g., 1 if teacher experience > 3 years and 0 otherwise). More often than not, the assumption of nonlinearity is empirically supported.

and ambiguity in doing their jobs (Lipsky, 1980, 2010). Over time, they argue, teachers become adept at dealing with the uncertainty and unpredictability of the educational task environment:

Veteran teachers learn how to juggle the many tasks involved in delivering quality instruction. They gradually see how to translate pedagogical theories into workable practices in their own particular settings. They can also learn over time how to sort through the distractions that can absorb energy and attention during a school day. They will have developed experience with difficult cases and multicultural nuances. Many of these craft-like skills, developed through years of experience, are only partially transferable to other districts with different mixes of students and different curricula. Sheer time in position in a local setting can help (O'Toole and Meier, 2003, p. 47).⁶

This logic motivates an empirical analysis in which O'Toole and Meier (2003) demonstrate that teacher stability⁷ in Texas school districts is positively related to school district performance, where performance is measured by the percentage of a district's students passing the Texas Assessment of Academic Skills (TAAS) test. O'Toole and Meier's (2003) findings complement those referenced above by suggesting that experience is not only important to student-level outcomes, but also to school-level outcomes.

A related stream of research indicates that highly qualified teachers are more likely than their less qualified colleagues to turnover, especially in low-performing schools. Boyd et al. (2005), for instance, showed that New York City public school teachers scoring in the 75th percentile or above on their general certification exam were more likely to depart than their peers, and that this likelihood increased with the percent of a school's students failing a standardized English Language Arts exam. Similarly, Podgursky et al. (2004) demonstrated that Missouri college graduates⁸ scoring high on the ACT were both less likely to teach in public

⁶ Though O'Toole and Meier (2003) reason that school-level teacher stability matters because of accumulated stores of experience, it could also matter because stability breeds stability. Felps et al. (2009), for instance, find that the job search behaviors and job embeddedness of one's coworkers influence one's own turnover decisions.

⁷ Teacher stability is measured as the percentage of a district's teachers employed in the preceding school year (O'Toole and Meier (2003) use longitudinal data) who still work for the district in the current year.

⁸ All graduates, not just education majors.

schools and, among those who did teach in public schools, more likely to leave early in their careers. Higher turnover rates among more qualified teachers will matter if teacher qualifications are positively associated with student or school-level performance, and evidence suggests that this is, in fact, the case (Clotfelter et al., 2006, 2007; Andersson et al., 2011). In general, it is reasonable to think that the problem of employee turnover is especially important when large shares of departing employees are comparatively "good" employees.⁹

Finally, turnover is of particular consequence in schools because it can negatively impact the sense of community among members of a school's population (e.g., teachers, students, parents, administrators). In turn, a fractured sense of community can have detrimental effects on student outcomes and school performance (Rosenholtz, 1989; Ingersoll, 2001; Battistich and Hom, 1997; Brookover et al., 1979; Leiter, 1983). Battistich and Hom (1997), for example, use data on 1,434 fifth and sixth grade students from 24 schools¹⁰ to show that a positive sense of community¹¹ is negatively associated with student drug use and student delinquency. These effects underscore the indirect nature of some teacher turnover costs. Teacher turnover is undesirable not only because it is expensive to search for and replace departed teachers, but also because turnover creates turbulence in a school's social environment and subsequently harms student and school-level performance.

⁹ Note that these findings pertain to pre-service *qualifications*, not to teacher quality per se. Pre-service qualifications are merely one way to measure quality. Studies using other measures of teacher quality, such as value-added to student achievement, suggest that effective teachers are less likely to turnover than ineffective teachers (Boyd et al., 2010; Goldhaber et al., 2010).

¹⁰ The authors use a multi-level model, controlling for unobserved between-school heterogeneity.

¹¹ Assessed using a 38-item scale that the authors show to be valid (unidimensional) and reliable (Cronbach's alpha = 0.91).

Principals

Principal turnover is important for the same reasons that teacher turnover is important—it entails direct and (potentially) indirect costs.¹² Regarding the former, school districts must spend time and money to search for and replace departed principals—a process that district superintendents tend to view with trepidation (Pijanowski et al., 2009). Regarding the latter, principals, like teachers, accumulate valuable experience within a given school over time. When they leave, any benefits that attend this experience go away.

Teachers are mainly concerned with the affairs of their own classrooms; their experience is gleaned at the front lines of public service delivery. Principals, by contrast, must concern themselves with a wider range of school affairs. They make personnel decisions; foster intraorganizational consensus; and buffer their schools from the external environment¹³, in addition to performing a variety of other functions (Griffith, 1999). Evidence suggests that over time, they become more skilled at doing these things (Eberts and Stone, 1988; Hallinger and Heck, 1996; but see Brewer, 1993). Recent findings from the public administration literature corroborate this conclusion (Juenke, 2005). Though Juenke (2005) focuses on school district superintendents rather than principals, his findings support the generic hypothesis that public managerial tenure has positive effects on organizational outcomes. In a related vein, public management scholars have argued that leadership stability and experience are positively

¹² Though monetary estimates of these costs are not available, it is reasonable to assume that they are at least as large as per-teacher turnover costs. The Department of Labor estimates the average monetary cost of turnover to be 30% of a departing employee's salary (Grissom, forthcoming). Assuming that principals, on average, make as much as or more than teachers in salary, it follows that the average per-principal cost of turnover will be at least equal to the average per-teacher cost of turnover.

¹³ Scholars of organizational theory and behavior have long recognized the buffering functions that managers perform (Thompson, 1967). Public administration scholars have incorporated this buffering function into a theory of public management (O'Toole and Meier, 1999) and have shown empirically how managerial buffering matters to organizational performance (Meier and O'Toole, 2008).

associated with public sector organizational performance (Rainey and Steinbauer, 1999; Behn, 1996). However, there is too little systematic empirical evidence in the public management literature to evaluate their arguments.¹⁴

In addition to the problem of lost experience, principal turnover raises other issues that are similar to those introduced by teacher turnover. Principals, like teachers, are more likely to leave disadvantaged schools.¹⁵ Using survival analysis, Loeb et al. (2010) show, for example, that the odds of principal turnover increase with the percent of a school's students receiving free or reduced price lunch, as well as with the percent of a school's students who are minorities. Importantly, though, they go on to show that once school climate variables (e.g., staff perceptions of school safety, resource adequacy, and positivity of environment) are introduced into models of principal turnover, the effects of student demographic variables become statistically insignificant. As Loeb et al. (2010) concede, though, student demographic variables and observable school climate variables (as well as unobservable school characteristics) are often highly correlated, making it difficult to disentangle their effects on principal turnover (223).

Data

Data for my dissertation's first two empirical chapters come from the 2003-04 and 2007-08 waves of the Schools and Staffing Survey (SASS), the 2004-05 and 2008-09 waves of the Teacher Follow-Up Survey (TFS), and the 2008-09 Principal Follow-Up Survey (PFS). Each of

¹⁴ Damanpour and Schneider (2009) offer evidence that is broadly relevant to the question of whether managerial experience is positively associated with organizational performance. They use large-N data on city managers to show that managerial tenure and innovation adoption (which can have indirect positive effects on organizational performance) have an inverted U-shaped relationship. Once tenure reaches a certain point, it has a negative effect on innovation adoption. This finding is consistent with the more general logic that too much experience or tenure can lead to managerial rigidity.

¹⁵ As with teacher turnover, this is important because differential principal attrition rates across disadvantaged and advantaged schools contribute to an uneven distribution of principal quality across these schools (Gates et al., 2006; Loeb et al., 2010).

these surveys is administered every four years by the Department of Education's National Center for Education Statistics. The 2003-04 and 2007-08 SASS data files contain nationally representative data on public and private schools from the fifty states, as well as data on the teachers and principals who work in those schools (and, in the case of public schools, data on school districts). For any given public school teacher, the researcher can link to data about that teacher's principal, school, and school district. Likewise, for any given principal, the researcher can link to school-level and district-level data. The 2004-05 and 2008-09 TFS data files hold information about the employment status (one year later) of all teachers who were part of the 2003-04 and 2007-08 SASS samples. Similarly, the 2008-09 PFS data file holds information about the employment status of all principals who were part of the 2007-08 SASS sample. Each of the SASS and TFS data files contains data on approximately 40,000 public school teachers, 8,000 public schools and public school principals, and 3,000 public school districts.¹⁶ The 2008-09 PFS data file contains data on the 8,000 public school principals who were part of the 2007-08 SASS sample.

In brief, the SASS's sample selection procedure is as follows. It first draws a nationally representative sample of public schools (schools are the SASS's primary sampling units)¹⁷, each of which receives the SASS "school questionnaire." Once a school is selected for inclusion in the sample, that school's district and principal are automatically sent a "district questionnaire" and "principal questionnaire," respectively. Finally, from within each of the sampled schools, a sample of teachers is drawn, and each of these teachers receives the SASS "teacher

¹⁶ The SASS, TFS, and PFS data files also contain data on private schools, private school teachers, and private school principals, but the numbers given above include only public schools, public school teachers, and public school principals.

¹⁷ The SASS uses the 2005-06 Common Core of Data Nonfiscal School Universe data file for its sampling frame. The SASS sample is a stratified probability-proportionate-to-size sample. The details of the SASS sampling procedure are too complex to cover here. Note that the SASS sampling method necessitates the use of appropriate weighting techniques so that point estimates and standard errors are correctly calculated.

questionnaire.” The separate questionnaires elicit a wealth of information from each set of respondents (teachers, principals, schools, and districts). Teachers and principals, for instance, answer survey questions about job satisfaction, pay satisfaction, and turnover intention, and provide individual-level demographic data. On the school and school district questionnaires, a knowledgeable official is asked to provide a range of information about her school or district (e.g., school size, number of full-time teachers, percentage of African-American students).

About one year after the SASS is administered, each school in the original SASS sample is sent a teacher status form (TFS-1), which lists all teachers in the sampled school who filled out SASS teacher questionnaires in the base, or SASS, year. The school's principal (or some other knowledgeable school official) provides information about the employment status of each teacher that is listed on the teacher status form, such as whether the teacher is still teaching in the base year school, has moved to a different school, or has left the teaching profession entirely. Subsequently, a "former teacher questionnaire" (TFS-2) is sent to all teachers who have left the teaching profession entirely ("leavers") and to a sample of teachers who have moved to a different school ("movers"). A "current teacher questionnaire" (TFS-3) is sent to a sample of teachers who are still teaching in their base year schools ("stayers"). I use information from the TFS-1, TFS-2, and TFS-3 to measure teacher turnover.

A process similar to the one described above is used to determine the follow-up year employment status of principals. One year after the SASS is administered, each school in the original SASS sample is sent a principal status form (PFS-1). A knowledgeable school official provides information about the employment status of the SASS-year principal, such as whether she is still the principal of the SASS-year school, has become the principal of another school, or has left the field of education entirely. I use this information to measure principal turnover.

One advantage of the SASS and TFS data are that they are nested—teachers and principals are nested in schools, schools are nested in districts, districts are nested in counties, and so on. This nesting is advantageous because it allows me to account for unobserved between-group heterogeneity. An analysis focused on the teacher-level predictors of teacher turnover can control for unobserved between-school heterogeneity, for instance (with fixed or random school effects). Similarly, an analysis focused on the school-level predictors of principal turnover can control for unobserved between-district heterogeneity (with fixed or random district effects). Another advantage of the SASS and TFS data are that they include information about both turnover intention and actual turnover. As I will argue in my first chapter, it is important to distinguish between the two in empirical research.

Data for the dissertation's third empirical chapter come from interviews with twelve current and former public school teachers working in the Washington, DC public school system (DCPS) and neighboring systems. Eight of the interviewees are current or former DCPS teachers, one is a former Washington, DC public charter school teacher (DCPC), and three are currently teaching in nearby Virginia public school systems (two in the Fairfax County public schools, one in the Loudoun County public schools). The use of small-N interview data in the dissertation's third empirical chapter is intended to complement the large-N approach of the dissertation's first two empirical chapters. The qualitative analysis undertaken in this chapter capitalizes on Washington, DC's prominence in ongoing education reform debates, and on Michelle Rhee's recent efforts to induce teachers' compliance with formal policy goals, to learn about how public school teachers view and react to performance-pay systems and dismissal threats.

I begin below, in my first empirical chapter, by illustrating how the use of turnover intention as a proxy for actual turnover in large-N research can produce misleading public management prescriptions. I do this using nationally representative data on public school teachers. In the dissertation's second empirical chapter, I transition to a focus on public school principals. Given that public school principals constitute a large class of public managers, it is useful to make them the focus of an analysis that tests whether managerial constraints are associated with managerial turnover decisions. Finally, in the dissertation's third empirical chapter, I narrow my analytical focus to teachers in the Washington, DC, public school system in order to more deeply explore the reasons underlying public sector employees' turnover behavior.

CHAPTER 2

TURNOVER: HOW DIFFERENT MEASURES CAN LEAD TO DIFFERENT PUBLIC MANAGEMENT PRESCRIPTIONS

Turnover is an especially serious issue in the context of public education, given that public school teachers constitute a large class of public sector workers, both nationwide and at the state and local levels. A report recently issued by the Congressional Research Service indicates that of all workers holding public sector jobs—about 17.3 million as of late 2010—25.4% were employed in education, training, and library occupations. Individuals falling in these three occupational categories comprised 24.4% and 34.1% of state and local workforces, respectively (Mayer 2011, 15). Given the scale of these numbers, and given that the costs associated with teacher turnover can be substantial—estimates range from \$12,546 (Alliance for Excellent Education 2005) to \$52,513 per departed teacher (Texas Center for Educational Research 2000)—it is important to identify factors that cause teachers to leave their schools.

In this study, I use nationally representative data on United States public school teachers to examine how the predictors of turnover intention and actual turnover differ. Many turnover studies use measures of turnover intention as surrogates for actual turnover, despite evidence that the two measures are only weakly correlated (Dalton et al. 1999). These studies assume that models of turnover intention can be safely used to make inferences about individuals' actual turnover decisions. But actual turnover and turnover intention are different things. Though both phenomena are undesirable, actual turnover is almost certainly more costly to an organization. Accordingly, my goal is to identify factors that push employees "over the edge." The identification of these factors can provide public managers with useful leverage points—workplace factors they can focus on to retain employees. Managers who want to curb turnover

and its attendant costs should focus their energies on these leverage points and spend less time worrying about things that do not trigger actual turnover.

To identify managerial leverage points, I specify parallel models of actual turnover and turnover intention, estimate them as a set using seemingly unrelated regression, and formally test whether the models' coefficients are the same. I then explore the substantive magnitude of model to model differences in these coefficients. These differences are important because they suggest that managerial prescriptions concerning turnover vary according to how turnover is measured.

Below, I proceed as follows. First, I discuss how and why different measures of turnover can lead to different managerial prescriptions about retaining employees. Second, I specify models of actual turnover and turnover intention, paying particular attention to factors that are especially relevant to public sector turnover. Next, I discuss my data and my models of turnover intention and actual turnover. I then discuss my estimation results and close with implications for practice and research.

Different Measures, Different Public Management Prescriptions: Turnover Intention as a Surrogate for Actual Turnover

Turnover is a concept that contains many distinct sub-elements, including voluntary turnover, involuntary turnover, organizational actual turnover, career actual turnover, organizational turnover intention, and career turnover intention. It is important to distinguish among these sub-elements in empirical analyses because their differences can make for different public management prescriptions concerning employee retention. An estimated regression model of organizational turnover intention might lead analysts to recommend that public managers promote employee participation as a retention strategy. By contrast, a model of organizational actual turnover might suggest that employee participation does not push

employees to *actually* leave their organizations. In another scenario, pay satisfaction might be negatively associated with both organizational turnover intention *and* organizational actual turnover. This scenario would indicate that public managers interested in retaining employees could be confident that addressing concerns about pay would be an effective retention strategy. Because managers have limited time and resources and cannot credibly commit to an unlimited array of organizational change initiatives (e.g., programs aimed at reducing turnover) (Reichers et al. 1997, Seshadri and Shapira 2001), it is important that they know which factors are likely to trigger actual turnover, not just turnover intention.¹⁸

The use of turnover intention as a surrogate for actual turnover is likely to be problematic because people do not always follow through on their intentions¹⁹ (March and Simon 1958, Mowday et al. 1982, Ajzen 1991). March and Simon (1958) were among the first turnover theorists to recognize that intentions do not necessarily translate into action. For March and Simon (1958), the perceived ease of movement from an employee's current organization to another organization is crucial to whether an employee will follow through on plans to leave. In general, movement will be easier when the economy is doing well and when the individual who is thinking about leaving has skills that are valuable in the labor market. Since the state of the economy and an individual's marketability will vary, so too will the strength of the relationship between turnover intention and actual turnover. Intention will correlate strongly with actual

¹⁸ This is not to suggest that turnover intention is not a meaningful problem in its own right. If it is associated with shirking, for instance, it is costly to an organization. Unlike actual turnover, though, turnover intention does not entail *direct* costs (i.e., the search and training costs that organizations incur in replacing departed employees).

¹⁹ For regression analyses, the imperfect correspondence between turnover intention and actual turnover raises the issues of measurement validity and reliability. Using turnover intention as a proxy for actual turnover introduces nonrandom and random measurement error into a regression analysis. Self-reported turnover intention probably systematically overestimates actual turnover—it is easier to say you're going to leave your job than to actually leave it. There is also random "noise" in any measure of turnover intention. For instance, individuals might say they intend to leave their jobs because they recently happened to have a bad encounter with their supervisor, not because of some true underlying intention to leave. Nonrandom measurement error in a regression equation's dependent variable can bias coefficient estimates, while random measurement error in a dependent variable results in larger standard errors for a model's coefficients (Wooldridge 2002).

behavior when an individual has many outside job options. Conversely, intention will correlate weakly with actual behavior when an individual has few outside job options.

Adding further complexity to the relationship between turnover intention and actual turnover are the risks that attend individuals' turnover decisions. Individuals who leave their current job before securing another job risk indefinite unemployment. By contrast, individuals who leave their job for another job that is already in hand risk a displeasing future work environment (Allen et al. 2003, Allen et al. 2005, MacCrimmon and Wehrung 1985). In other words, persons who want to leave their job—because of an overbearing boss, dissatisfaction with pay, general dissatisfaction, etc.—may stay if they are unwilling to bear the risks that accompany the decision to leave.

Another reason that turnover intention might not reliably predict actual turnover is that individuals have different motives for expressing an intention to leave their jobs, some of which are more remediable than others. Vandenberg and Nelson (1999) note, for instance, that employees may express an intention to leave because they are unhappy with a specific aspect of their job, such as their supervisor, or because of a more general unhappiness with their organization. Persons in the "specific-motive" group will be less likely to follow through on their turnover intentions than persons in the "global-motive" group because specific grievances are more easily addressed than are global grievances. Persons who are unhappy with their supervisor can try to transfer to a different work group. By contrast, persons whose unhappiness attaches to the organization as a whole will find solace only in leaving the organization. This suggests that public organizations would be better off focusing their retention efforts on specific-motive individuals than on global-motive individuals. From the organization's perspective, individuals in the specific-motive group represent a more tractable public management problem.

The imperfect mapping of turnover intention onto actual turnover behavior is cause for researchers to be wary of using intention as a proxy for behavior in quantitative analyses. In general, the adequacy of intention as a surrogate for actual turnover will depend on how highly the two are correlated. As Dalton et al. (1999) emphasize, "The usual assumption is that the surrogate variable is highly correlated with its actual behavioral counterpart." This assumption, though, is questionable. Meta-analyses have shown the correlation between turnover intent and actual turnover to be moderate at best, with correlation coefficients ranging from 0.31 to 0.52 (Carsten and Specter 1987, Hom et al. 1992, Hom and Griffeth 1995, Steele and Ovalle 1984, Tett and Meyer 1993).

Despite the problems detailed above, studies using turnover intention as a dependent variable often draw conclusions about the predictors of actual turnover. These studies assume that the coefficient estimates obtained from a model of turnover intention would be the same as coefficient estimates obtained from a model of actual turnover, were both models estimated. Whether this assumption is reasonable is an empirical question. Accordingly, I test the following hypothesis:

H₁: Coefficients obtained from similarly specified models of turnover intention and actual turnover are different.

The corresponding null hypothesis is shown below:

H₀: Coefficients obtained from similarly specified models of turnover intention and actual turnover are not different.

Rejection of this null hypothesis would be evidence that the practice of using turnover intention as a proxy for actual turnover is indeed problematic. Additionally, the identification of important "between-model" differences in key coefficients can be the basis for public management prescriptions about employee retention. Public managers concerned with retaining employees can concentrate their efforts on the factors that trigger actual turnover, not just turnover intention.

Conversely, failure to reject the above null hypothesis would suggest that analysts using measures of turnover intention as proxies for actual turnover are on solid ground. Prescriptively, failure to reject the null hypothesis would imply that public managers can focus their energies on factors that drive employees to consider leaving their jobs.

Determinants of Employee Turnover

Before testing whether models of actual turnover and turnover intention produce different results, it is necessary to specify those models. Accordingly, this section discusses an array of factors that are commonly thought to be associated with individuals' turnover decisions. Each of these factors will appear as independent variables in parallel models of actual turnover and turnover intention, which I will estimate below. I first discuss independent variables that are particularly relevant in the context of public organizations—employee discretion and pay-for-performance. I then discuss, in turn, administrative support, job and pay satisfaction, coworker solidarity, and participative decision-making. In addition to these key predictors, a number of other variables are included as controls in this study's models of turnover intention and actual turnover. These controls (and brief explanations) are shown in table 2.3.

Employee discretion. The reinventing government movement of the 1990s made public employee discretion one of its central themes (Osborne and Gaebler 1993, Barzelay 1992, Report of the National Performance Review 1993). Osborne and Gaebler (1993), whose popular book spurred the movement on, asserted that "...things simply work better if those working in public organizations—schools, public housing developments, parks, public training programs—have the authority to make many of their own decisions" (251). The Report of the National Performance Review echoed these sentiments, arguing that government organizations should "empower those who work on the front lines to make more of their own decisions and solve

more of their own problems" (from Shafritz et al. 2004, p. 560). And in *Breaking through Bureaucracy*, Barzelay (1992) identified employee empowerment as one facet of a "post-bureaucratic paradigm," which he contrasted with the traditional bureaucratic paradigm's emphasis on rule-following. While these works are concerned primarily with government-level performance, they all suggest that individual employees will be more satisfied with their jobs if freed from their bureaucratic shackles.

Discretion is especially important to the work of street-level bureaucrats, who often confront novel and ambiguous situations for which there are no clear guidelines (Lipsky 1980, Maynard-Moody and Musheno 2003, Keiser 2010). Street-level bureaucrats value discretion because they need it to make nonroutine decisions and because they rely on unsanctioned coping mechanisms to deal with problematic working conditions. Teachers, who constitute an important class of street-level bureaucrats, exercise discretion in making judgments about what will and will not work in their classrooms (Shedd and Bacharach 1993). That street-level bureaucrats—and teachers in particular—value discretion suggests that having little of it will make them unhappy and will, in turn, make them more likely to leave their jobs. Accordingly, I test the following hypothesis:

H₂: Discretion is negatively associated with turnover intention and actual turnover.

Pay-for-Performance. A number of public administration scholars have noted problems with performance pay's core and secondary assumptions—namely, that public employees will respond to financial incentives by working harder and better, and that the existence of financial incentive systems will help public organizations attract and retain quality workers (Perry 1986, Perry and Wise 1990, Kellough and Lu 1993). Perry and Wise (1990), for instance, argued that utilitarian incentive structures might not be appropriate for public organizations, since public

employees will tend to be motivated more by public service ideals than monetary rewards. Moreover, Ingraham (1993) emphasized that a variety of conditions must be met before pay-for-performance systems have a chance of working as intended. Among other things, public managers must have sufficient discretion and resources to adequately reward productive employees and sanction unproductive employees.

Empirical research suggests that these scholars' doubts about pay-for-performance are justified. In a recent review of the empirical literature, Perry et al. (2009) concluded that "performance-related pay in the public sector consistently fails to deliver on its promise" (43). Focusing specifically on turnover intention, Bertelli (2007) produced mixed results with respect to pay-for-performance. Using survey data from employees of the Internal Revenue Service (IRS) and the Office of the Comptroller of the Currency (OCC), he finds that employees' perceptions of being held accountable for results are positively related to turnover intention. On the other hand, he finds that the existence of performance incentives is negatively related to turnover intention. Whether promotions are merit based or whether performance rewards are bestowed in a timely manner have no significant effects on turnover intentions in Bertelli's (2007) analysis. More recently, Pitts et al. (2011) use Federal Human Capital Survey data to show that the existence of a "performance culture" within agencies is positively associated with federal employees' turnover intentions.²⁰ They speculate that performance-based pay systems may "weed out" an agency's poor performers, who might prefer working in organizations that do not use such systems to differentially reward employees (755).

²⁰ "Performance culture" is measured using federal employees' responses to four survey items: "Promotion in my work unit are based on merit;" "Employees are rewarded for providing high quality products and services to customers;" "Pay raises depend on how well employees perform their jobs;" and "Awards in my work unit depend on how well employees perform their jobs."

Given that pay-for-performance has had mixed results in the public sector, it is difficult to predict whether it will be positively or negatively associated with employee turnover. Thus, I test the following two-tailed hypothesis:

H₃: Performance pay programs will be associated (either positively or negatively) with turnover intention and actual turnover.

Administrative Support. Theory and empirical research suggest that administrative support of lower-level employees is important to both organizational performance and employee attitudes. Mintzberg (1979), for instance, argues that administrators in professional bureaucracies (i.e., organizations in which front-line employees have considerable autonomy) exist partly to buffer non-administrative personnel from the external environment (362). For administrators, buffering encompasses such things as shielding personnel from outside pressures and securing resources so that personnel can do their jobs effectively. In the case of public schools, buffering might entail a principal intervening in parent/teacher disputes on behalf of the teacher (Melcher 1976, p. 334, cited in Mintzberg 1979).

In line with Mintzberg (1979), O'Toole and Meier's (1999) theoretical model of public organizational performance posits that a key part of what effective public managers do is buffer their organizations from shocks in the external environment. While O'Toole and Meier's (1999) model is concerned with organizational performance and not individual-level employee attitudes, its emphasis on stability is nonetheless relevant to employee turnover. In their model, the objective of managerial buffering is to maintain organizational stability, which is threatened by high amounts of employee turnover.

Ingersoll (2001) and Grissom (2011) have shown that teachers' perceptions of administrative support are negatively related to teacher turnover. Though little other empirical research directly tests the effect of administrative support on employee turnover, other findings

are broadly relevant. Research on leader-member exchange theory suggests that high quality supervisor-subordinate relationships are negatively associated with employee turnover, for instance (Graen et al. 1982, Ferris 1985). More generally, a large body of research suggests that employees' satisfaction with their supervisors is negatively related to turnover (e.g., Cotton and Tuttle 1986, Aquino et al. 1997, Griffeth et al. 2000). This reasoning motivates the following hypothesis:

H₄: Administrative support is negatively associated with turnover intention and actual turnover.

Job and Pay Satisfaction. Job satisfaction appears as an independent variable in nearly all theoretical and empirical work on turnover. Early on, March and Simon (1958) argued that job satisfaction is negatively associated with the perceived desirability of movement from one's job. Mobley (1977) later contended that job dissatisfaction is an initial link in a causal chain leading to turnover. According to Mobley (1977), job dissatisfaction engenders thoughts of quitting and subsequently causes individuals to evaluate the expected utility of a search for alternative jobs. If this expected utility is high enough, an individual (1) initiates a search for alternatives; (2) evaluates available alternatives and compares them to the currently held job; (3) formulates an intention to stay or leave; and (4) either does or does not follow through on that intention. Few empirical studies trace this entire causal path²¹; nevertheless, research supports the basic proposition that job satisfaction is negatively related to turnover intention and actual turnover (e.g., Cotton and Tuttle 1986, Carsten and Specter 1987, Lambert et al. 2001).

Pay satisfaction, like job satisfaction, is expected to reduce the likelihood of both turnover intention and actual turnover. March and Simon (1958) suggest that in general, "dissatisfaction arises from a disparity between reality and the ego-ideal held by the individual"

²¹ Some have critiqued Mobley's (1977) model of the turnover process, primarily for its lack of clearly defined constructs and because it is not parsimonious (see, e.g., Hom et al. 1984, Hom and Griffeth 1991).

(94). Pay dissatisfaction is a specific manifestation of this tendency. According to March and Simon (1958), individuals have an idea of how much they are worth in terms of money and status. If the money and status that their jobs provide do not meet this ideal, they become dissatisfied and look for other jobs. Given this theoretical expectation, pay dissatisfaction is particularly important in the public sector context. In 1989, for instance, the Volcker Commission concluded that the availability of higher paying jobs in the private sector makes it difficult for federal agencies to attract and retain high quality employees (National Commission on the Public Service 1989). Lewis (1991) came to a similar conclusion in his own analysis of federal employee turnover. In recent empirical work, Bertelli (2007) and Kim (2005) found pay satisfaction to be negatively related to turnover intent, though this relationship was not statistically significant in Kim's (2005) analysis.

H₅: Job satisfaction is negatively associated with turnover intention and actual turnover.

H₆: Pay satisfaction is negatively associated with turnover intention and actual turnover.

Coworker Solidarity. Brehm and Gates (1997) argue that in addition to pecuniary preferences, public sector employees' solidary preferences (i.e., the utility they gain from their relationships with coworkers) affect their on-the-job decision making. They adduce empirical evidence suggesting that solidary preferences are positively associated with extra work effort and negatively associated with sabotage (i.e., bureaucrats not acting in accord with existing policies). More recently, Bertelli (2007) found that federal employees' solidary preferences are negatively associated with turnover intention. In addition to these findings, empirical research supports the more general propositions that employees' satisfaction with their coworkers and coworker cohesion are negatively associated with turnover intention and actual turnover (Cotton and Tuttle

1986, Griffeth et al. 2000, Lambert et al. 2001). For these reasons, I expect coworker solidarity to be negatively related to turnover intention and actual turnover in my own analysis.

H₇: Coworker solidarity is negatively associated with turnover intention and actual turnover.

Participative decision-making. While definitions of this construct abound (see, e.g., Cotton et al. 1988), there appears to be some consensus that it denotes employee influence in organizational-level processes and policies (Wagner 1994). At the very least, studies in the public administration literature have operationalized participative decision-making in ways that reflect this conception of the term (Kim 2002, Wright and Kim 2004, Grissom forthcoming). Participative decision-making is believed to increase workers' feelings of empowerment and their ability to modify objective job characteristics. Increases in these factors are presumed, in turn, to enhance employees' job satisfaction. Empirical research confirms these expectations (Kim 2002, Wright and Kim 2004). Moreover, research suggests that participative decision-making is negatively associated with turnover intention (Griffeth et al. 2000, Kim 2005). Accordingly, I expect participative decision-making to be negatively associated with turnover intention and actual turnover in the present study.

H₈: Participative decision-making is negatively associated with turnover intention and actual turnover.

Data, Models, and Method

Data for this study are drawn from the 2003-04 wave of the Department of Education's Schools and Staffing Survey (SASS) and the 2004-05 Teacher Follow-Up Survey (TFS). Below, I will refer to 2003-04 as the "base year" and 2004-05 as the "follow-up" year. Every four years, the SASS collects nationally representative data from teachers in all fifty states plus the District of Columbia (teachers fill out a "teacher questionnaire"). The SASS also collects base year data

from principals ("principal questionnaire"), schools ("school questionnaire"), and districts ("district questionnaire"). Thus, for any given teacher, the researcher can link to data about that teacher's principal, school, and school district.

About one year after the SASS is administered, each school in the original SASS sample is sent a teacher status form (TFS-1), which lists all teachers in the sampled school who filled out SASS teacher questionnaires in the base year. The school's principal provides information about the follow-up year employment status of each teacher that is listed on the teacher status form, such as whether the teacher is still teaching in the base year school, has moved to a different school, or has left the teaching profession entirely. Subsequently, a "former teacher questionnaire" (TFS-2) is sent to all teachers who have left the teaching profession entirely ("leavers") and a "current teacher questionnaire" (TFS-3) is sent to a sample of teachers who have moved to a different school ("movers"). I use information from the TFS-1, TFS-2, and TFS-3 to measure actual turnover. All told, the SASS and TFS data files contain data on approximately 40,000 public school teachers, 8,000 public schools and public school principals, and 3,000 public school districts.²²

I estimate the following models of turnover and turnover intention:

$$(1a) \text{orgturnover}_i = \beta \text{key} + \Pi \text{control} + \pi_d + \varepsilon_i,$$

$$(1b) \text{orgintent}_i = \beta \text{key} + \Pi \text{control} + \pi_d + \varepsilon_i,$$

$$(2a) \text{carturnover}_i = \beta \text{key} + \Pi \text{control} + \pi_d + \varepsilon_i,$$

$$(2b) \text{carintent}_i = \beta \text{key} + \Pi \text{control} + \pi_d + \varepsilon_i.$$

Above, **key** is a vector of substantively interesting predictors (discussed in the previous section and described in more detail below); **control** is a vector of control variables; π_d represents

²² The SASS and TFS data files also contain data on private schools, private school teachers, and private school principals, but the numbers given above include only public schools, public school teachers, and public school principals. These figures, as well as all figures shown below, are rounded to comply with NCES restricted-use data guidelines.

unobserved between-district heterogeneity; and ε_t is a random teacher-level error term. Note that while my units of analysis are teachers, the *key* and *control* vectors contain teacher-level, school-level, and district-level variables.

As the models indicate, I construct two measures of actual turnover: one measure of organizational turnover (*orgturnover*), one measure of career turnover (*carturnover*), and two corresponding measures of turnover intention (*orgintent* and *carintent*). By organizational turnover, I mean that a teacher has moved from his or her base year school to another school. By career turnover, I mean that a teacher has left teaching altogether. It is important to distinguish between these two types of turnover because the decision to move to another school and the decision to leave teaching altogether are qualitatively different. In the former case, a teacher may be committed to the teaching profession but unhappy with some aspect of his or her current school. In the latter case, the teacher is likely to be less committed to the teaching profession. More generally, an individual may be committed to his or her career but not to his or her particular organization (Chang 1999, Somech and Bogler 2002). All variables used in the analysis are described below.

Dependent Variables

Orgturnover_t: = 1 if teacher t is, during the 2004-05 academic year, teaching in a different school than he or she taught in during the 2003-04 academic year; = 0 if teacher t is teaching in the same school.

Carturnover_t: = 1 if teacher t is, during the 2004-05 academic year, working in an occupation outside the field of education; = 0 if teacher t is still teaching in the base year school.

Orgintent_t: Organizational turnover intention is measured by a teacher's response (in the base year) to the statement, "I think about transferring to another school." Teachers indicate their

agreement or disagreement with this statement on a four-point response scale. Response options are (1) strongly disagree, (2) somewhat disagree, (3) somewhat agree, and (4) strongly agree.

Since organizational turnover is a dichotomous variable, I code organizational turnover intention as a dichotomous variable to facilitate straightforward formal testing of H_1 : *Coefficients obtained from similarly specified models of turnover intention and actual turnover are different.*²³

Specifically, $orgintent_t$ is coded 1 if teacher t responds "strongly agree" to the above question and 0 otherwise.²⁴ The logic behind this approach is to require a strong expression of turnover intention, so that the intention variable will better approximate the actual decision to move to another school.

Carintent_t: Career turnover intention is measured by a teacher's response to the item, "How long do you plan to remain in teaching?" To answer, teachers choose from five response options: (1) As long as I am able, (2) Until I am eligible for retirement, (3) Will probably continue unless something better comes along, (4) Definitely plan to leave teaching as soon as I can, and (5) Undecided at this time. Since career turnover is a dichotomous variable, I code career turnover intention as a dichotomous variable to facilitate formal cross-model hypothesis testing. Specifically, $carintent_t$ is coded 1 if teacher t responds "definitely plan to leave as soon

²³ For a comparison of coefficients across models to make substantive sense, the models' dependent variables must be measured on the same scale. Here, I use a dichotomous scale to measure both turnover intention and actual turnover. Formal testing of cross-model hypotheses is important for the same reason that formal testing of any hypothesis is important. A formal cross-model hypothesis test allows us to assess whether observed cross-model differences are systematic and not simply the result of random sampling error. Similarly, a standard one-tailed hypothesis test allows us to assess whether an observed regression coefficient represents a systematic relationship between an independent variable and a dependent variable, and is not just an artifact of random sampling error.

²⁴ As an alternative, I coded $orgintent_t$ 1 if teacher t responded either "somewhat agree" or "strongly agree" and 0 otherwise. Using this coding, the results were only slightly different in terms of sign and significance. Using the original coding, participative decision-making was not statistically significant; using the alternative coding, it was.

as I can" and 0 otherwise. Again, the idea is to require a strong expression of turnover intention, so that the intention variable approximates the actual turnover variable.²⁵

Table 2.1, which presents a cross-tabulation for each turnover variable and its corresponding intention variable, shows that teachers do not always follow through on their intentions. Consider, for instance, the first column of table 2.1's top panel, which displays a cross-tabulation of career turnover and career turnover intention. The column indicates that only 5.9% of teachers expressing an intention to leave teaching actually did so. By contrast, 94.1% of teachers expressing an intention to leave teaching did not actually do so. Table 2.1's bottom panel indicates that teachers are more likely to act on their organizational turnover intentions than their career turnover intentions. Specifically, the table shows that of the 2,070 teachers who expressed an intention to move to another school, 19.8% actually did so.

²⁵ As with organizational turnover intention, I experimented with an alternative coding for the career turnover intention variable. Specifically, I coded *carintent_i* 1 if teacher *t* responded either "definitely plan to leave teaching as soon as I can" or "will probably continue unless something better comes along." The results were different for the administrative support, pay satisfaction, coworker solidarity, and participative decision-making variables. Using the original coding, administrative support was unexpectedly positive (but statistically nonsignificant); using the alternative coding, it was positive and significant. Using the original coding, pay satisfaction was unexpectedly positive and significant; using the alternative coding, it was negative and significant. Using the original coding, coworker solidarity was negative (as expected) but nonsignificant; using alternative coding, it was negative and significant. Finally, coworker solidarity was negative and significant using the original coding; using the alternative coding, it was negative but nonsignificant.

Table 2.1. Percentage of public school teachers actually leaving their jobs, by turnover intention.

		Career turnover intention		
		Yes	No	Total
Career actual turnover	Yes	5.9%	0.6%	0.7%
	No	94.1%	99.4%	99.3%
	Total	100.0% (680)	100.0% (35,820)	100.0% (36,500)

		Organizational turnover intention		
		Yes	No	Total
Organizational actual turnover	Yes	19.8%	6.4%	7.1%
	No	80.2%	93.6%	92.9%
	Total	100.0% (2,070)	100.0% (36,940)	100.0% (39,010)

Career turnover intention: "How long do you plan to remain in teaching?"

Organizational turnover intention: "I think about transferring to another school."

Column percentages and (column totals) are shown.

Independent Variables

Discretion. I measure discretion using a teacher's answers to six survey items, each of which asks teachers about their degree of control over some facet of their job: (1) selecting textbooks and other instructional materials; (2) selecting content, topics, and skills to be taught; (3) selecting teaching techniques; (4) evaluating and grading students; (5) disciplining students; and (6) determining the amount of homework to be assigned. Teachers respond to these items on a four-point scale, where 1 = no control, 2 = minor control, 3 = moderate control, and 4 = a great deal of control. The results of a principal components factor analysis suggest that the six items

concerning teacher control are measuring a single underlying concept. The eigenvalue for the first factor is 2.88, accounting for 48.0% of the total factor space (here, 6), and each individual item loads heavily on this factor.²⁶ Cronbach's alpha for these six items is 0.75, indicating acceptable reliability. I use the sum of a teacher's responses to these six items to measure discretion.²⁷ Descriptive statistics for this and other key predictors are shown in table 2.2. As the table shows, teachers tend to report a good deal of discretion. Discretion ranges from 6 to 24, with a mean of 20.8 and a standard deviation of 2.96.

²⁶ In interpreting the results of the principal components factor analyses performed here and below, I look for the following: A single factor that “dominates the total factor space” (i.e., one that explains a considerably larger proportion of the included questionnaire items’ total variance than any other factors). (The total factor space is equal to the number of items that are used to measure a construct). I also look for each item to load positively and heavily on that factor. If both of these conditions are met, I assume that the given questionnaire items are a valid measure of the construct that I am attempting to tap (Langbein 2006). Note that the standards for interpreting factor analyses seem to be less stringent than this in the large-N public management literature. Meier and O’Toole (2005), for instance, appear to adhere to the conventional (and weaker) rule that any factor with an eigenvalue greater than one should be considered “significant” and therefore retained.

²⁷ As an alternative measurement approach, I used the regression scoring method to create a factor score measure of discretion for each teacher. I then computed the school-level mean (i.e., the average discretion of all teachers within the school) of these factor scores and used that mean to measure teacher discretion. The purpose for doing this was to mitigate any potential bias that might arise if teachers who intend to turnover or who have already decided to turnover at the end of the school year systematically indicate lower discretion to justify their intention or decision to turnover. Previous empirical work that uses the SASS data has also used school-level mean measures to guard against this type of potential bias (Ingersoll 2001, Grissom 2011). I find that using this alternative measurement approach does not produce results that are appreciably different from those obtained when measuring discretion at the teacher level.

Table 2.2. Descriptive statistics for key independent variables

	Mean	SD	Min	Max
Discretion	20.80	2.96	6	24
PFP: National Board for Professional Teaching Standards Certification	0.42	0.49	0	1
PFP: Excellence in teaching	0.10	0.30	0	1
PFP: Reward completion of in-service professional development	0.33	0.47	0	1
PFP: Recruit or retain teachers to teach in less desirable locations	0.13	0.33	0	1
PFP: Recruit or retain teachers to teach in fields of shortage	0.21	0.41	0	1
Administrative support	19.42	3.81	6	24
Job satisfaction	3.46	0.73	1	4
Pay satisfaction	2.25	1.00	1	4
Coworker solidarity	15.34	2.70	5	20
Participative decision-making	15.61	4.26	7	28

N = 39,010

Pay-for-Performance. Information for this study's pay-for-performance variables comes from the SASS school district questionnaire. The school district questionnaire asks, "Does this district currently use any pay incentives such as cash bonuses, salary increases, or different steps on the salary schedule to—(a) reward teachers who have attained National Board for Professional Teaching Standards certification, (b) reward excellence in teaching, (c) reward completion of in-service professional development, (d) recruit or retain teachers to teach in a less desirable location, (e) recruit or retain teachers to teach in fields of shortage?" A school district official answers yes or no to each of these questions. For each of the five incentive programs, I create a dummy variable that equals one if the district uses the program and zero if it does not.

As table 2.2 shows, 42% of teachers work in schools with pay-for-performance programs that reward teachers who have attained National Board for Professional Teaching Standards certification; 10% work in schools that reward excellence in teaching; 33% work in schools that reward completion of in-service professional development; 13% work in schools that use rewards to recruit or retain teachers in less desirable locations; and 21% work in schools that use financial rewards to recruit or retain teachers to teach in fields of shortage.

Administrative Support (first factor eigenvalue = 3.74, Cronbach's alpha = 0.88): I measure administrative support using the sum of a teacher's responses to six survey items: (1) the principal lets staff members know what is expected of them; (2) the school administration's behavior toward the staff is supportive and encouraging; (3) my principal enforces school rules for student conduct and backs me up when I need it; (4) the principal knows what kind of school he/she wants and has communicated it to the staff; (5) in this school, staff members are recognized for a job well done; and (6) I like the way things are run at this school. Teachers indicate their agreement/disagreement with each of these six items on a four-point response scale, where 1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = strongly agree. On average, teachers report high levels of administrative support, which ranges from 6 to 24, with a sample mean of 19.42.

Job and Pay Satisfaction. Job and pay satisfaction are each measured using a single item from the SASS teacher questionnaire. Job satisfaction is assessed via a teacher's agreement/disagreement (on the four-point scale shown above) with the following statement: I am generally satisfied with being a teacher at this school. Similarly, pay satisfaction is assessed via a teacher's agreement/disagreement with the following statement: I am satisfied with my teaching salary. As table 2.2 suggests, teachers tend to be more satisfied with their jobs than

with their pay. The mean of teachers' responses to the job satisfaction item is 3.46, while the mean of teachers' responses to the pay satisfaction item is 2.25.

Coworker Solidarity (first factor eigenvalue = 2.43, Cronbach's alpha = 0.72): I measure coworker solidarity using the sum of a teacher's responses to five items: (1) Rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes; (2) most of my colleagues share my beliefs and values about what the central mission of the school should be; (3) there is a great deal of cooperative effort among the staff members; (4) I make a conscious effort to coordinate the content of my courses with that of other teachers, and (5) the teachers at this school like being here; I would describe us as a satisfied group. Response options include 1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = strongly agree. The coworker solidarity variable ranges from 5 to 20, with a sample mean of 15.34.

Participative Decision-making (first factor eigenvalue = 3.23, Cronbach's alpha = 0.80). Teachers respond to seven questions about the degree of their influence over school policy in various areas: (1) setting performance standards for students, (2) establishing curriculum, (3) determining the content of in-service professional development programs, (4) evaluating teachers, (5) hiring new full-time teachers, (6) setting discipline policy, and (7) deciding how the school budget will be spent. Response options include 1 = no influence, 2 = minor influence, 3 = moderate influence, and 4 = a great deal of influence. I use the sum of a teacher's responses to the seven items listed above to measure participative decision-making, which ranges from a minimum of 7 to a maximum of 28, with a sample mean of 15.61.

Control Variables. In addition to the key independent variables described above, many control variables are included in my models of turnover intention and actual turnover. These

include teacher-level controls and school-level controls. Teacher-level control variables are as follows: career commitment, burnout, school problem severity, teacher salary, teacher race, teacher gender, teacher age (coded categorically), teacher education, teacher experience (coded categorically), teacher certification, and teaching field (dummies for math and natural sciences teachers and special education teachers).

School-level control variables are as follows: principal race, principal gender, principal experience, principal's years at current school, principal education, school size (total enrollment), average daily attendance, student/teacher ratio, teacher quality (a subjective measure reported by principals), %black students, %Hispanic students, %free lunch students, administrators per student, support staff per student, instructional aides per student, fraction of a school's total capacity that's filled, whether the school faces classroom overflows, whether the school has a library or not, expulsions per student, suspensions per student, school location (urban, suburban, rural), and school level (primary, middle, high, combined). Table 2.3 presents descriptive statistics for all controls and a brief description for variables requiring explanation.

Table 2.3. Descriptive statistics for control variables

	Mean	SD	Min	Max
Career commitment	3.86	1.18	1	5
<i>If you could go back to your college days and start over again, would you become a teacher or not? (1=certainly would become a teacher, 2=probably would become a teacher, 3=chances about even for and against, 4=probably would not become a teacher, 5=certainly would not become a teacher)</i>				
Burnout	5.64	1.98	3	12
<i>Sum of three items:</i>				
<i>1. The stress and disappointments involved in teaching at this school aren't really worth it; 2. I don't seem to have as much enthusiasm now as I did when I began teaching; 3. I think about staying home from school because I'm just too tired to go (1=strongly disagree, 2=somewhat disagree, 3=somewhat agree, 4=strongly agree).</i>				
Teacher's perception of school problems	24.83	6.78	11	44
<i>Sum of eleven items (to what extent is each of the following a problem in this school):</i>				
<i>1. Student tardiness, 2. Student absenteeism, 3. Student class cutting, 4. Teacher absenteeism, 5. Student pregnancy, 6. Students dropping out, 7. Student apathy, 8. Lack of parental involvement, 9. Poverty, 10. Students come to school unprepared to learn, 11. Poor student health (1=not a problem, 2=minor problem, 3=moderate problem, 4=serious problem)</i>				
Teacher salary (1000s)	40.51	12.62	0	200
Teacher race				
White	0.84	0.36	0	1
African-American	0.06	0.24	0	1
Asian-American	0.03	0.16	0	1
American Indian	0.03	0.17	0	1
Hispanic	0.04	0.19	0	1
Teacher gender: male	0.32	0.47	0	1
Teacher age				
21 - 29	0.15	0.36	0	1
30 - 54	0.68	0.47	0	1
55+	0.16	0.37	0	1
Teacher degree				
Associate's	0.01	0.07	0	1
BA	0.54	0.50	0	1
MA	0.44	0.50	0	1
Doctorate	0.01	0.11	0	1

N = 39,010. Continued on next page.

Table 2.3 (continued). Descriptive statistics for control variables

	Mean	SD	Min	Max
Teacher experience				
<i>1 year or less</i>	0.08	0.27	0	1
<i>2-3 years</i>	0.11	0.31	0	1
<i>4-5 years</i>	0.11	0.31	0	1
<i>6-8 years</i>	0.13	0.33	0	1
<i>9-11 years</i>	0.10	0.30	0	1
<i>12-20 years</i>	0.21	0.41	0	1
<i>21+ years</i>	0.27	0.44	0	1
Teacher certification				
<i>Standard</i>	0.88	0.32	0	1
<i>Probationary</i>	0.03	0.17	0	1
<i>Provisional</i>	0.04	0.20	0	1
<i>Temporary</i>	0.02	0.15	0	1
<i>Waiver or Emergency</i>	0.01	0.09	0	1
<i>None of the above</i>	0.02	0.13	0	1
Math or natural sciences teacher (1=yes, 0=no)	0.17	0.38	0	1
Special education teacher (1=yes, 0=no)	0.12	0.33	0	1
Principal race				
<i>White</i>	0.84	0.37	0	1
<i>African-American (base: white)</i>	0.09	0.29	0	1
<i>Asian-American</i>	0.01	0.10	0	1
<i>American Indian</i>	0.02	0.15	0	1
<i>Hispanic</i>	0.04	0.19	0	1
Principal gender: male	0.65	0.48	0	1
Principal's years of experience	8.02	7.22	0	40
Principal's years at current school	4.44	4.91	0	40
Principal degree:				
<i>Associate's or BA</i>	0.02	0.12	0	1
<i>MA</i>	0.58	0.49	0	1
<i>Education specialist</i>	0.30	0.46	0	1
<i>Doctorate</i>	0.10	0.30	0	1
School size	821.98	650.82	<10	4960
Average daily attendance	92.09	13.08	0	100

N = 39,010. Minimum and maximum values are rounded or approximated to comply with NCES restricted-use data guidelines. Continued on next page.

Table 2.3 (continued). Descriptive statistics for control variables

	Mean	SD	Min	Max
Student/teacher ratio	15.37	17.40	<1	120
Teacher quality <i>Principals respond to the question, "In your opinion, what percentage of teachers in this school are presently teaching to high academic standards?"</i>	80.38	17.88	0	100
%Black students	14.43	23.99	0	100
%Hispanic students	10.83	19.28	0	100
%Free lunch students	39.50	26.59	0	100
Administrators per student	0.00	0.01	0	<0.50
Support staff per student	0.01	0.02	0	<1.50
Instructional aides per student	0.02	0.03	0	<1.50
Fraction building capacity filled	1.17	11.50	<0.05	>750
Classroom overflow (1=yes, 0=no)	0.20	0.40	0	1
No library in school (1=yes, 0=no)	0.96	0.19	0	1
Expulsions per student	0.01	0.03	0	1
Suspensions per student	0.21	0.52	0	>20
School location:				
<i>Urban</i>	0.25	0.43	0	1
<i>Suburban</i>	0.43	0.50	0	1
<i>Rural</i>	0.31	0.46	0	1
School level:				
<i>Primary</i>	0.28	0.45	0	1
<i>Middle</i>	0.13	0.34	0	1
<i>High</i>	0.48	0.50	0	1
<i>Combined</i>	0.11	0.31	0	1

N = 39,010. Minimum and maximum values are rounded or approximated to comply with NCES restricted-use data guidelines

Estimation. Recall that I am estimating the following four models:

$$(1a) \text{orgturnover}_i = \beta \text{key} + \Pi \text{control} + \pi_d + \varepsilon_b$$

$$(1b) \text{orgintent}_i = \beta \text{key} + \Pi \text{control} + \pi_d + \varepsilon_b$$

$$(2a) \text{carturnover}_i = \beta \text{key} + \Pi \text{control} + \pi_d + \varepsilon_b$$

$$(2b) \text{carintent}_i = \beta \text{key} + \Pi \text{control} + \pi_d + \varepsilon_b$$

Since I am interested in formally testing the equivalence of coefficients obtained from models of actual turnover and turnover intention, I treat 1a and 1b (and 2a and 2b) as sets and estimate them using seemingly unrelated regression.²⁸ Seemingly unrelated regression's primary advantage is that it more efficiently estimates a set of equations whose error terms are correlated—as is the case in the current analysis—than estimation strategies that ignore this correlation.

Each of the models shown above includes a term (π_d) that represents unobserved school district heterogeneity—differences between school districts (e.g., differences between districts' surrounding labor markets) that are either unmeasured or unmeasurable, and that are potential sources of omitted variable bias. A common way to account for these differences is to use a fixed effects approach, which here would entail the inclusion of a dummy variable for each school district in the data. This approach is problematic in the present case, though, because my dependent variables are (1) dichotomous (calling for logistic regression) and (2) are constant within many school districts. Estimating a fixed effects logit model, which might be desirable in other situations, here causes many districts (more specifically, the teachers within those districts) to be dropped from the analysis due to perfect collinearity.²⁹ One way to handle unobserved school district heterogeneity without losing observations would be to treat my dependent variables as continuous and use OLS to estimate linear probability models with district fixed effects, but logistic regression is typically considered more appropriate for dichotomous dependent variables (Long 1997).

²⁸ Once a set of models is estimated, an F-test can be used to test whether all coefficients are equal across models (e.g., $H_0: \beta_{\text{intent}} = \beta_{\text{actual}}$). A Wald test can be used to test whether a single coefficient is equal across models (e.g., $H_0: b1_{\text{intent}} = b1_{\text{actual}}$) (Wooldridge 2002).

²⁹ Another problem is that the inclusion of district fixed effects would preclude estimation of my models' pay-for-performance coefficients, since the pay-for-performance variables are measured at the district level (making them perfectly collinear with district dummies).

In view of the issues discussed above³⁰, I first used OLS with district fixed effects to estimate a linear probability model for each of my dependent variables. I then compared coefficient estimates obtained from this approach with estimates obtained using logistic regression (without fixed effects).³¹ Noting minimal differences between the two approaches (in terms of sign and significance), and in accordance with common practice, I settled on logistic regression. In all models, standard errors are clustered by school.

Results

Table 2.4 presents four sets of logit coefficients—one for each of my dependent variables—along with the results of Wald tests for between-model coefficient equivalence. The table shows results for key independent variables only, though each model was estimated with all of the control variables listed in table 2.3. While the individual coefficients are of course important, between-model differences are of more interest in the present study, since they suggest that managerial prescriptions regarding turnover may vary depending on how turnover is measured. Below, I will discuss each of the independent variables shown in table 2.4 in turn, paying particular attention to between-model differences. At the same time, I will also discuss the substantive significance of these findings by examining changes in the predicted probabilities of turnover intention and actual turnover that are associated with changes in each independent variable.

³⁰ Another potential problem is that my analysis uses "rare events" data—data in which the event under examination (here, turnover) occurs very infrequently. To make sure this wasn't a serious problem in the current analysis, I estimated King and Zeng's (2001) "rare events logit" model (for all dependent variables) and compared the coefficients obtained in doing so to standard logit coefficients. There were no marked differences.

³¹ Another way to deal with unobserved heterogeneity without losing observations would be to include higher-level fixed effects (e.g., county or state fixed effects). Using county fixed effects is problematic because doing so still leads to dropped observations. The use of state fixed effects does not change the substance of the results.

Table 2.4. Logit results and Wald test results: Actual turnover vs. turnover intention

	Career Turnover				Organizational Turnover			
	Actual	Intention	Difference		Actual	Intention	Difference	
			Chi2	p-value			Chi2	p-value
Discretion	-0.016 (0.026)	0.028* (0.014)	2.26	0.133	-0.026** (0.009)	0.004 (0.010)	5.79	0.016
PFP: National Board for Professional Teaching Standards Certification	-0.078 (0.166)	-0.036 (0.092)	0.05	0.821	0.110* (0.056)	-0.038 (0.062)	3.33	0.068
PFP: Excellence in teaching	0.309 (0.223)	0.120 (0.143)	0.55	0.460	-0.022 (0.099)	-0.028 (0.100)	0.00	0.965
PFP: Reward completion of in-service professional development	-0.216 (0.178)	0.090 (0.096)	2.46	0.117	-0.088 (0.060)	0.015 (0.064)	1.40	0.236
PFP: Recruit or retain teachers to teach in less desirable locations	0.078 (0.271)	-0.107 (0.137)	0.39	0.530	0.078 (0.098)	-0.027 (0.094)	0.62	0.429
PFP: Recruit or retain teachers to teach in fields of shortage	0.059 (0.196)	0.165 (0.106)	0.24	0.625	-0.083 (0.074)	0.067 (0.072)	2.18	0.140
Administrative support	0.036 (0.028)	0.029* (0.014)	0.04	0.837	-0.003 (0.009)	-0.080** (0.009)	38.89	0.000

Notes: * $p < 0.05$ ** $p < 0.01$. Clustered standard errors (by school) are in parentheses.

Each model set was estimated using seemingly unrelated regression. Wald test results (Chi2 test statistics and corresponding p values) for the equivalence of coefficients appear in the "Difference" columns.

Continued on next page.

Table 2.4 (continued). Logit results and Wald test results: Actual turnover vs. turnover intention

	Career Turnover				Organizational Turnover			
	Actual	Intention	Difference		Actual	Intention	Difference	
			Chi2	p value			Chi2	p value
Job satisfaction	-0.560** (0.095)	-0.417** (0.059)	1.80	0.180	-0.336** (0.037)	-0.611** (0.041)	28.03	0.000
Pay satisfaction	0.105 (0.086)	0.093 (0.049)	0.02	0.903	0.055* (0.027)	-0.148** (0.035)	21.99	0.000
Coworker solidarity	0.037 (0.041)	-0.013 (0.021)	1.23	0.267	-0.007 (0.013)	-0.031* (0.014)	1.70	0.192
Participative decision-making	0.039 (0.021)	-0.031* (0.013)	8.31	0.004	-0.001 (0.007)	-0.013 (0.009)	1.28	0.259
Observations	25,020	29,550			26,780	29,550		

Notes: * $p < 0.05$ ** $p < 0.01$. Clustered standard errors (by school) are in parentheses.

Each model set was estimated using seemingly unrelated regression. Wald test results (Chi2 test statistics and corresponding p values) for the equivalence of coefficients appear in the "Difference" columns.

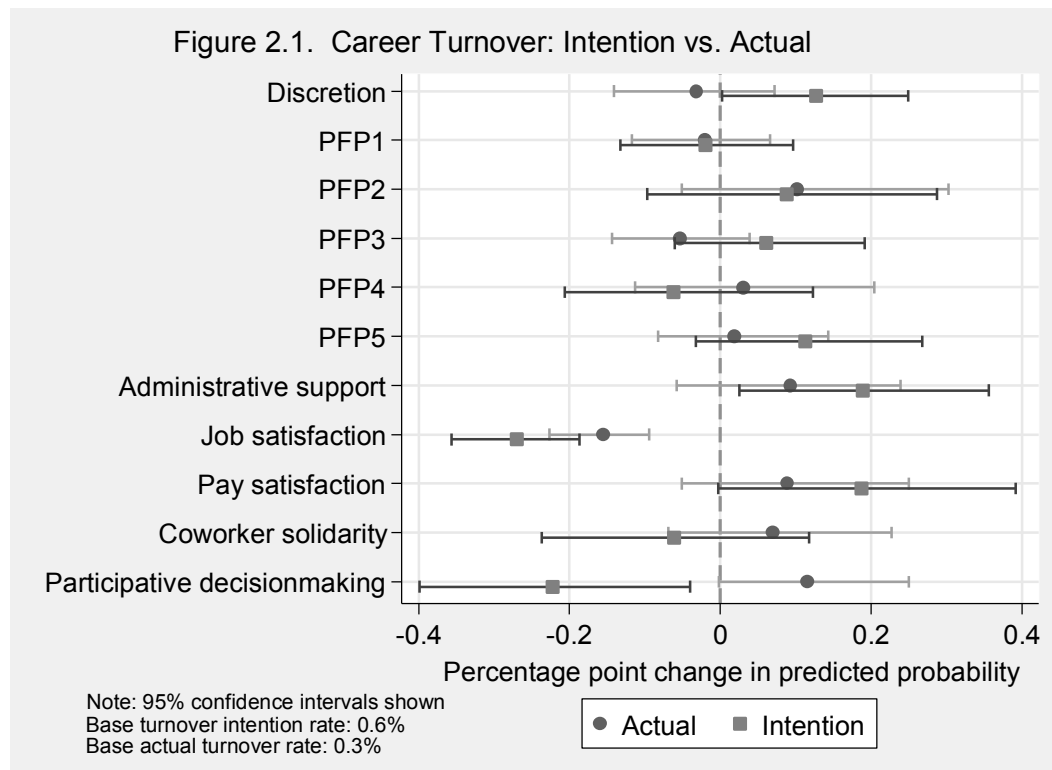
Note first that in the career turnover model set, discretion has a statistically nonsignificant negative coefficient in the actual turnover model but a statistically significant positive coefficient (contra to theoretical expectations) in the intention model. While these conflicting coefficients would, at first blush, seem to suggest that increases in discretion affect career turnover intention and career actual turnover differently, a Wald test indicates that the difference between these two coefficients is not statistically significant at conventional levels. As table 2.4 shows, the p-value for a Wald test of the difference is 0.133.

Figure 2.1 illustrates why the career turnover model set's two discretion coefficients are not statistically different even though the intention coefficient is positive (and statistically significant) while the actual turnover coefficient is negative. The figure shows changes in the predicted probabilities of career turnover intention and career actual turnover that are associated with low to high changes in each independent variable, holding all other independent variables constant. Here, a “low to high” change means moving from an independent variable's 25th percentile value to its 75th percentile value.³² For instance, figure 2.1 shows that a 25th to 75th percentile increase in discretion is associated with a very small—nearly zero, in fact—decrease in the probability of career actual turnover.³³ At the same time, figure 2.1 shows that a 25th to 75th percentile increase in discretion is associated with an increase in the probability of career turnover intention of a little over 0.1 percentage points. Most importantly, figure 2.1 shows that the 95% confidence intervals for each of these estimated changes overlap, which means that these two “effects” are not statistically different. In a sense, they are simply too close together to

³² More specifically, a low to high change means moving from the 25th percentile to the 75th percentile for a continuous independent variable. A low to high change for a categorical variable (the models' pay-for-performance variables) means moving from 0 to 1.

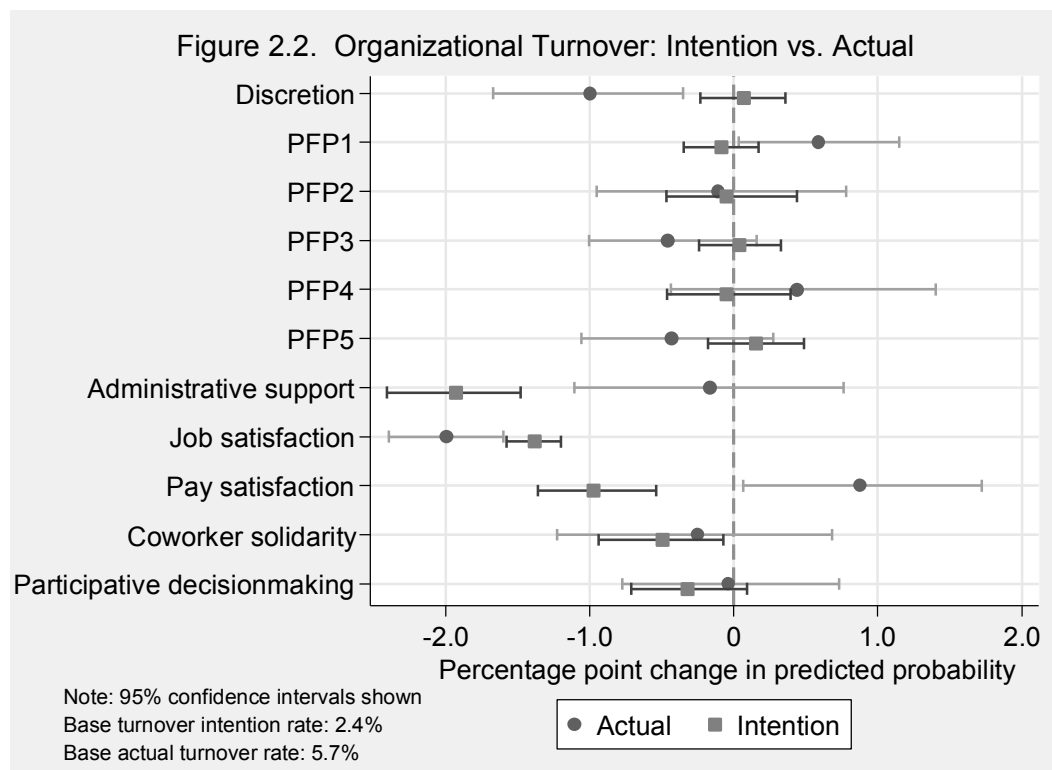
³³ If an estimated effect's confidence interval crosses zero, it is not statistically significant at the 0.05 level.

be significantly different. That they are so close together implies that models of career turnover and career turnover intention will tend to lead to similar management prescriptions concerning the impact of discretion on employee turnover.



In the organizational turnover model set, we observe an opposite pattern for the discretion variable. The discretion coefficient is negative and statistically significant in the actual turnover model (as expected), but statistically nonsignificant in the intention model. Here, the difference between the two coefficients is statistically significant at the 0.05 level (p -value = 0.016). Figure 2.2 displays the magnitude of discretion's impact on organizational turnover intention and organizational actual turnover. The figure shows that a 25th to 75th percentile increase in discretion is associated with a one percentage point decrease in the probability of organizational

actual turnover. While a one percentage point decrease may seem low, it is important to note that the probability of organizational turnover is low to begin with—here, as figure 2.2 notes, the base organizational turnover rate is 5.7%, or 0.057.³⁴ Thus, a one percentage point drop in this base rate represents a decrease of 17.5% (i.e., 0.01/0.057). By contrast, a 25th to 75th percentile increase in discretion is associated with a change in the probability of organizational turnover intention that is nearly zero. Taken together, these results suggest that public management prescriptions concerning turnover would vary depending on how turnover is measured. A model of actual organizational turnover would suggest that employee discretion is a viable "leverage point"—a factor associated with actual turnover that public managers can focus on to retain employees. A model of organizational turnover intention would suggest the opposite.



³⁴ 5.4% is the predicted probability of organizational actual turnover when all independent variables (including controls) are set to their mean values.

These differing prescriptions are problematic because managers interested in retaining employees must devote time, energy, and managerial capital to any retention efforts.

Presumably, since public managers are often held accountable for organizational outputs that are easily observable, they will prefer to direct scarce managerial resources where those resources are likely to produce tangible results (Bohte and Meier 2000). Actual turnover is an easily observable, tangible output; turnover intention is not. It would therefore behoove public managers to know which factors trigger actual turnover, and not merely turnover intention.

Moving to the pay-for-performance results, we observe only one statistically significant coefficient out of ten total. Specifically, the presence of a pay-for-performance system that rewards teachers for earning a National Board for Professional Teaching Standards certification is positively associated with the probability of actual organizational turnover. As figure 2.2 shows, the probability of actual organizational turnover is about 0.5 percentage points higher in school districts that have this type of performance pay system in place. Note, though, that this pay-for-performance variable's coefficient in the actual organizational turnover model is not statistically different than its coefficient in the organizational turnover intention model. This suggests that models of organizational actual turnover and organizational turnover intention will tend to converge on similar management prescriptions regarding performance pay's role in employee retention.

An examination of the remaining results reveals four important between-model differences in the predictors of actual turnover and turnover intention. First, in the career turnover model set, the participative decision-making coefficient is negative and statistically significant in the turnover intention model but statistically nonsignificant in the actual turnover model. Moreover, the difference between these coefficients is statistically significant at the 0.01

level. Employees—here, teachers—may value (or dislike) certain things, such as a say in their organization's policies, but these things will not be so important as to directly affect the actual decision to stay or leave.³⁵ Individuals' risk aversion and fear of the unknown might, for instance, make them wary of acting on their turnover intentions.

From a prescriptive standpoint, the finding that participative decision-making is associated with turnover intention but not with actual turnover suggests that principals concerned with retaining teachers would be better off focusing on variables (e.g., job satisfaction, discretion) that are associated with actual turnover. As already emphasized, public managers are—for better or for worse—often held accountable for easily observable outputs (Bohte and Meier 2000). Thus, a principal deciding where to direct scarce resources (e.g., time, money, credibility) might be better off concentrating those resources where she can be confident they will produce tangible results. Additionally, actual turnover carries direct costs that turnover intention does not (e.g., costs incurred to recruit and train a departed employee's replacement). Consequently, concentrating resources on factors known to be associated with actual turnover might give public managers more “bang for their buck” than focusing on factors known to be associated only with turnover intention.

The three remaining statistically significant between-model differences all occur in the organizational turnover model set. Administrative support is negatively associated with organizational turnover intention ($p < 0.001$) but not associated with organizational actual turnover. As figure 2.2 shows, a 25th percentile to 75th percentile increase in administrative support is associated with a decrease in the probability of organizational turnover intention of about two percentage points. By contrast, a 25th percentile to 75th percentile increase in

³⁵ Of course, participative decision-making may have indirect effects on actual turnover (via its effects on turnover intention or job satisfaction, for instance). But without a measure of actual turnover, an analyst cannot know whether this is the case.

administrative support is associated with a decrease in the probability of actual organizational turnover that is very close to zero. Administrative support is important in that it is associated with a lower probability of organizational turnover intention, but it is not so important that it affects actual organizational turnover. Clearly, when teachers perceive their administrators to be supportive, they are less likely to think about moving to other schools. They are not, however, less likely to actually move to other schools, suggesting that principals concerned with teacher retention would be better off focusing on other factors—factors that are associated with actual turnover.

Next, note that job satisfaction is negatively associated with both organizational turnover intention and organizational actual turnover. As figure 2.2 shows, its impact on organizational actual turnover is larger than its impact on organizational turnover intention. A 25th percentile to 75th percentile increase in job satisfaction is associated with a decrease in the probability of actual organizational turnover of just over two percentage points. The same increase in job satisfaction is associated with a decrease in the probability of organizational turnover intention of about 1.4 percentage points. Both of these results are substantively meaningful. Recall that the actual organizational turnover base rate is 0.057, as figure 2.2 notes. A two percentage point decrease in this rate represents a decrease of about 35% ($0.02/0.057$). A 1.4 percentage point decrease in the organizational turnover intention base rate—0.024—represents a decrease of just over 58% ($0.014/0.024$). While the difference between the two job satisfaction results is statistically significant, the management prescription in this case is clear. Managers hoping to retain employees can be confident that focusing efforts on employee job satisfaction will yield results.

Pay satisfaction is negatively associated with organizational turnover intention but positively associated with organizational actual turnover. More precisely, a 25th percentile to 75th percentile increase in pay satisfaction is associated with about a one percentage point decrease in the probability of organizational turnover intention. By contrast, a 25th percentile to 75th percentile increase in pay satisfaction is associated with about a one percentage point increase in the probability of actual organizational turnover. Here, the model of actual organizational turnover produces the nonsensical management prescription that public managers seeking to retain employees should take steps to reduce their employees' pay satisfaction. The model of organizational turnover intention yields the more sensible prescription that public managers interested in employee retention should make efforts to increase their employees' pay satisfaction.

This situation, in which the two models' pay satisfaction results conflict, illustrates how using multiple measures of the turnover construct can facilitate a nuanced understanding of the retention problem. A plausible explanation for the opposing pay satisfaction coefficients is that teachers who are happy with their pay might have no *intention* of leaving their jobs, but also might be most capable of *actually* securing other teaching positions. The reasoning here is as follows: pay satisfaction reflects pay, which reflects (albeit imperfectly) teacher quality, and highly qualified teachers are better able to secure other teaching positions than less qualified teachers. Thus, a teacher who is satisfied with his or her pay might in fact have no underlying intention of leaving his or her job, but will be better able to capitalize on spontaneously arising opportunities than a less qualified teacher. Reliance on a single measure of turnover would preclude this insight. It could also lead to nonsensical management prescriptions regarding the problem of employee retention.

Conclusion

The goal of this study was to illustrate how relying on measures of turnover intention to craft management prescriptions about employee retention can be problematic. Ideally, we would like to know which factors trigger actual turnover, since actual turnover carries costs that turnover intention does not. These costs include the time and money spent searching for and training a departed employee's replacement, as well as the time and effort spent by an organization's remaining employees to temporarily fill the operational vacuum left by a departed colleague. By identifying factors that are associated with actual turnover, and not just turnover intention, public management studies can produce management prescriptions that are likely to yield tangible results.

In the present study, one such factor was employee discretion, which was negatively associated with organizational actual turnover but not associated with organizational turnover intention. Since discretion impacts actual turnover, and not just turnover intention, public managers can be confident that taking steps to increase employee discretion will pay off. By contrast, focusing on factors associated only with turnover intention would be unlikely to pay off. One such factor in this study was administrative support, which was negatively associated with organizational turnover intention but not associated with actual organizational turnover. Another such factor was participative decision-making, which was negatively associated with career turnover intention but not associated with actual career turnover. While it is useful to know that administrative support and participative decision-making might decrease the probability of turnover intention, it would be more useful for public managers to know whether it might decrease the probability of actual turnover. After all, public managers tend to be interested in observable results—results for which they are held accountable. Public management prescriptions based only on the findings that administrative support and

participative decision-making are negatively associated with turnover intention would be misleading if they implied that administrative support and participative decision-making were factors that managers could address to actually retain employees.

In general, failing to distinguish among the sub-elements of the very broad turnover construct can preclude a full, nuanced understanding of the turnover process. In the present study, pay satisfaction was (as expected) negatively associated with organizational turnover intention but *positively* associated with actual organizational turnover. Consequently, distinguishing between turnover intention and actual turnover led to the insight that individuals who are satisfied with their pay may not harbor underlying plans to leave their jobs, but they are perhaps better positioned to actually leave their jobs than individuals who are dissatisfied with their pay. Here, the turnover intention results served as a very useful complement to the actual turnover results.

Given that turnover is such an expansive construct, containing as it does many distinct sub-elements, there is ample opportunity for future research to explore how different types of turnover might be amenable to different managerial solutions. Sector to sector (e.g., public to private, public to non-profit) turnover might, for instance, be driven by different factors than intra-organizational positional switching (e.g., a federal agency employee moving from one sub-agency to another). As researchers pay more attention to these different types of turnover, the managerial prescriptions flowing from their work will become more and more useful to practicing public managers.

CHAPTER 3

MANAGERIAL CONSTRAINTS AND PUBLIC MANAGERS' TURNOVER DECISIONS

Public managers and street-level bureaucrats are, simultaneously, antagonists and allies. They are antagonists because they pursue different goals and value different things. Public managers are interested in—and held accountable for—the achievement of organizational-level goals (e.g., maximizing organizational efficiency), while street-level bureaucrats are interested, most basically, in dealing successfully with the daily exigencies of their jobs. Consequently, public managers want to limit street-level bureaucrats' discretion and direct it toward organizational-level objectives, while street-level bureaucrats, who value their discretion, want to maximize it (Lipsky 1980). Owing to these dynamics, the two sets of actors occupy naturally opposing positions within any given bureaucracy. Lipsky (1980), for one, has described their relationship as "intrinsically conflictual" (25).

At the same time as they oppose each other, public managers and street-level bureaucrats rely on each other. Theirs, as Lipsky (1980) emphasizes, is a relationship characterized not only by conflict, but also by "mutual dependence" (25). Street-level bureaucrats depend on managers to grant them sufficient latitude to deal effectively with workplace demands. Public managers, in turn, depend on street-level bureaucrats to work diligently in pursuit of organizational-level goals. Ideally, reciprocity would be assured—street-level bureaucrats would do what public managers want them to do, and public managers would stay out of the way.

But street-level bureaucrats do not always do what their managers (or, for that matter, elected officials) want them to do (Brehm and Gates 1997; Meyers et al. 1998, 2001; Riccucci 2005). Presumably, then, public managers will value the capacity to motivate recalcitrant employees to work toward organizational-level goals. More specifically, public managers will value the capacity to incentivize good performance (i.e., performance in keeping with

organizational-level objectives) and penalize poor performance. In the current paper, I test this proposition using data on a nationally representative sample of public school principals. Specifically, I test whether turnover and negative (positive) work attitudes are greater (lower) among public school principals who face many personnel constraints than among public school principals who face few personnel constraints. The basic logic motivating this test is that public managers will prefer to work in settings in which they are able to use incentives to motivate employees to settings in which they are unable to do so. Put simply, if we place public managers in managerial handcuffs, will we frustrate them to the point that they quit?

Personnel Constraints, Organizational Performance, and Public Managers

During the 1980s and 1990s, proponents of the New Public Management (NPM) argued that government organizations should focus on outputs (as opposed to inputs) and "let managers manage" (Kettl 1997, p. 447). According to NPM supporters, if managers were allowed to do as they saw fit, unconstrained by onerous rules and regulations, improvements in organizational performance would follow. In the United States, the National Performance Review applied this general philosophy to the specific area of personnel management. The Review called, for instance, for federal agencies to "strengthen systems to support management in dealing with poor performers."³⁶ Like the NPM's proponents, the National Performance Review's supporters believed that organizational performance would improve if public managers were freed from the constraints of overly rigid personnel policies.

Personnel constraints matter from an organizational perspective because they make it difficult for public managers to reward good employees and punish bad employees. Thus, good

³⁶ From "Reinventing Human Resource Management," an accompanying report of the National Performance Review. Available at <http://govinfo.library.unt.edu/npr/library/reports/hrm.html>.

employees have little incentive to become better employees (or to remain good employees) and bad employees have little incentive to become good employees. Consider, for instance, two personnel constraints—dismissal barriers and a lack of merit pay—and their impact on organizational performance. If there are considerable barriers to dismissing poorly performing employees, public managers will not be able to credibly threaten poor performers with dismissal. Conversely, if an organization lacks a merit pay program, the organization's managers will not be able to reward top-performers with pay increases. Empirically, Kraft (1991) has shown that dismissals—and the implicit threat of dismissal conveyed by actual dismissals—increase worker and firm productivity.³⁷ And in research using education data, Figlio and Kenny (2007) and Winters et al. (2006) show that teacher merit pay is positively associated with increases in student performance. These results suggest that personnel constraints may preclude organizations from capturing employee-based productivity gains.

The premise of this paper is that personnel constraints impact not only organizational performance, but also public managers' work attitudes and turnover decisions. As already noted, public managers are concerned with organizational-level goals, but they must depend on their subordinates to work toward the fulfillment of those goals. Therefore, it is reasonable to think that public managers will prefer to work in organizational settings where they are able to gain compliance from subordinates to organizational settings where they are unable to gain compliance. Public managers want, in other words, the capacity to motivate their subordinates (using either rewards or punishments, or both) toward the achievement of organizational goals—goals for which public managers are held accountable.

³⁷ This is true only up to a point. If dismissals become too widespread (and seemingly capricious), employee morale suffers and employees begin to look for work that is more secure.

Recent empirical research in public administration bears this basic proposition out (DeHart-Davis and Pandey 1995, Daley 2008, Chen 2011). DeHart-Davis and Pandey (2005), for instance, examine how personnel red tape affects city managers' attitudes about their jobs. They hypothesize that public managers in organizations with high levels of red tape will report higher levels of alienation (disengagement from their work) than public managers in organizations with low levels of red tape. Their findings confirm this hypothesis. Specifically, they show that a multi-item index of personnel red tape is negatively associated with multi-item indices of job satisfaction, job involvement, and organizational commitment, each of which are thought to be sub-elements of the more general alienation construct. In a similar analysis, Daley (2008) shows that when federal agency supervisors encounter difficulty dealing with poorly performing subordinates³⁸, the supervisors are more likely to consider leaving the federal government. Finally, Chen's (2011) results suggest that the presence of rules that make it difficult to link subordinates' promotions to performance and rules that make it difficult to remove poor performers are negatively associated with certain positively valenced work attitudes held by public managers (e.g., job involvement, job satisfaction).

My work extends the research discussed above in four important ways. First, it moves into a new and important domain (public education). Second, it incorporates previously unexamined, theoretically interesting personnel constraints (to be described below). Third, it incorporates previously unexamined measures of public managers' work attitudes, including a measure of their actual turnover decisions. Finally, it uses a fixed effects regression approach to

³⁸ Daley (2008) measures this difficulty using the sum of a respondent's answer to four "yes/no" survey items: "Of the difficulty you had in dealing with an employee with a performance problem, were any of the following a reason for the difficulty? 1. You didn't believe your action would be upheld by a third party, 2. Insufficient support from higher-level management, 3. Your dislike of confrontation, 4. Your lack of confidence in the performance management system" (57).

combat potential omitted variable bias. Below, I discuss how and why certain personnel constraints can be expected to affect public managers' turnover decisions and work attitudes.

Personnel Constraints: Theory and Hypotheses

This study's empirical analysis focuses on four unique personnel constraints (or anti-constraints): dismissal barriers; pay-for-performance programs, which I call anti-constraints; non-managerial influence in organizational policy; and hiring difficulties. Below, I discuss how each of these personnel constraints would make it difficult for public managers to motivate their employees to work diligently in pursuit of organizational goals. The general logic motivating each of the specific hypotheses listed below is that any constraint-produced motivational difficulties will negatively impact public managers' feelings about their work environment.

Dismissal Barriers

In discussing how organizations induce individuals to work toward the achievement of an organizational goal, Barnard (1938) emphasizes one particular "method of persuasion" that is relevant to this study's analysis—forced exclusion (141). He notes that organizations sometimes use forced exclusion of particular members to credibly threaten remaining members; that is, organizations use forced exclusion "to create fear among those not directly affected, so that they will be disposed to render to an organization certain contributions" (149). Though Barnard's language is mechanical and somewhat antiquated, his point is clear: Employees who perceive dismissal to be a real possibility will be more likely to work conscientiously than employees who do not. Kraft (1991) reiterates this point in his study of dismissals and their effects on worker productivity, noting that "the possibility and actual occurrence of dismissals serve as an incentive

for the remaining workforce to meet the required performance standards" (451).^{39,40} Presumably, then, public managers who are unable to issue credible dismissal threats will have trouble motivating employees; consequently, their leverage over organizational-level outcomes will be attenuated. This logic motivates the following hypothesis:

H₁: Public school principals who perceive many barriers to the dismissal of poorly performing teachers will be more likely to turnover and will express greater (lower) levels of negative (positive) work attitudes than public school principals who perceive few barriers to the dismissal of poorly performing teachers.

Pay-for-Performance

The basic theoretical premise of pay-for-performance is that individuals will work to secure some outcome if they value it and believe that their effort will make its realization more likely.⁴¹ It follows from this premise that a principal can use rewards (e.g., extra pay) to incentivize an agent to work in furtherance of the principal's goals (Perry et al. 2009).⁴² A public school principal with a pay-for-performance program at his disposal could, for instance, use it to incentivize teachers to work to secure gains in student achievement. The empirical literature on public school pay-for-performance programs suggests that these programs do, in fact,

³⁹ Importantly, for the threat of dismissal to be credible, the equilibrium unemployment rate must be high enough that it is in the interest of individual employees to work rather than shirk (and risk being dismissed). If the unemployment rate was not sufficiently high, dismissed workers could too easily secure new jobs for the threat of dismissal to be a useful incentive device (Shapiro and Stiglitz 1984). More generally, for the threat of dismissal to be credible, dismissal must be sufficiently costly to the employee. Dismissal costs can be monetary (e.g., the loss of a high wage) or non-monetary (e.g., the risk of unknown new working conditions, the loss of coworker friendships).

⁴⁰ It is important to note that dismissals can have a nonlinear effect on worker productivity. At some point, productivity will suffer because remaining workers will seek safer employment, and the best of these remaining workers will most easily be able to locate it. Moreover, frequent dismissals hurt employee morale and result in losses of firm-specific human capital (Kraft 1991).

⁴¹ If p is the probability that high effort (working) will lead to the desired outcome and q is the probability that low effort (shirking) will lead to the desired outcome, an agent's efficacy—his ability to affect the outcome—is $p - q$. Other things being equal (e.g., effort costs, promised rewards), the agent is more likely work when $p - q$ is large (Miller and Whitford 2007).

⁴² This discussion of performance pay's theoretical basis is oversimplified. There are, as Miller (1992) shows, serious obstacles to designing efficient incentive systems, particularly in group settings.

successfully serve this purpose. Reviewing this literature, Podgursky and Springer (2007) conclude, "In most of these studies, the incentive regime was found to yield positive student achievement results. Moreover, in every study, the effect of incentives was to raise the level of the variable being incentivized" (935).⁴³ The evidence suggests, then, that public school principals with performance pay programs in their managerial repertoire will be better able to motivate teachers than public school principals who lack recourse to these programs. This reasoning motivates the following hypothesis:

H₂: Public school principals working in school districts with pay-for-performance programs will be less likely to turnover and will express lower (higher) levels of negative (positive) work attitudes than public school principals working in school districts without pay-for-performance programs.

Non-Managerial Influence in Organizational Policy

Public managers do not exercise complete, unrivalled control over a public organization's policies. Politicians, street-level bureaucrats, clients, and other interest groups all desire influence in creating and implementing policy. In the context of public education, local school boards, state departments of education, parents, and teachers are just some of the actors who seek—and have a legitimate claim to—a voice in the policy process (Chubb and Moe 1990). These actors' influence in school policy decisions impinges on principals' managerial autonomy, making it difficult for principals to unilaterally do things that might increase school performance.

Arguing from a public choice perspective, Chubb and Moe (1988, 1990) contend that non-managerial influence in school decision-making hamstrings public school performance relative to private school performance. According to their argument, private school principals

⁴³ It is important to note that the "variable being incentivized" might not be as intended, ex ante, by program designers. Public school pay-for-performance programs may intend to incentivize student achievement gains, but in fact may encourage undesired strategic teacher behavior. More generally, poorly designed incentive systems may lead to "gaming" (Courty and Marschke 2003).

enjoy more managerial autonomy than public school principals and are therefore at liberty to make decisions that they believe will improve school performance. While Chubb and Moe (1990) are interested in how between-sector differences in non-managerial influence affect school performance, my interest is confined to public schools. Nevertheless, Chubb and Moe's general argument—that non-managerial influence in school policy is associated with school performance—is applicable. Some public schools will be subject to more non-managerial influence than others; consequently, some public school principals will be less able to align school policy with their preferences than other public school principals. Accordingly, I expect the following:

H₃: Public school principals who are subject to a high degree of non-managerial influence will be more likely to turnover and will express higher (lower) levels of negative (positive) work attitudes than public school principals who are subject to a low degree of non-managerial influence.

Difficulty Filling Vacancies

I assume that difficulties in filling vacant positions within an organization primarily reflect difficulties in locating and attracting qualified candidates for those positions. I further assume that these difficulties will make it harder for public managers to achieve desired objectives—as long as a position goes unoccupied, stopgap measures (e.g., assigning more work to remaining employees) will be necessary to cover the vacancy. Therefore, public managers will value the ability to quickly and easily fill vacant positions.

In the context of public education, public school principals will value the ability to fill vacant teaching positions with qualified candidates. A growing empirical literature shows that teachers have a considerable impact on student achievement (see Podgursky and Springer (2007) for a review). Importantly, recent work suggests that observable measures of teacher quality (e.g., certification, experience) are positively associated with student performance (Clotfelter et

al. 2006, 2007; Andersson et al. 2011). Since teacher quality (including observable indicators of teacher quality) appears to positively impact student achievement, principals who can quickly fill vacant positions with qualified teachers will be able to more promptly capitalize on any teacher-induced gains in student and school performance than principals who cannot. Their ability to secure desired objectives will therefore be less constrained. This reasoning motivates my final hypothesis:

H₄: Public school principals who experience great difficulty filling vacant teaching positions will be more likely to turnover and will express higher (lower) levels of negative (positive) work attitudes than public school principals who experience minimal difficulty filling vacant teaching positions.

Data

Data for the analysis conducted below come from the 2007-08 Schools and Staffing Survey (SASS) and the 2008-09 Principal Follow-Up Survey (PFS), which were administered by the Department of Education's National Center for Education Statistics. The 2007-08 SASS data are similar to the 2003-04 SASS data in most respects. I use the 2003-04 and 2004-05 data in the previous chapter and the 2007-08 and 2008-09 data here for two reasons. First, the 2004-05 follow-up data contain more detailed information about teachers' follow-up year employment status than the 2008-09 follow-up data. Second, 2008-09 was the first time follow-up data were collected for principals. Below, I will sometimes refer to 2007-08 as the "base year" and 2008-09 as the "follow-up" year). The 2007-08 SASS and 2008-09 PFS data files contain nationally representative data on public schools from the fifty states (and Washington, DC), as well as data on the teachers and principals who work in those schools. The files also contain data on the school district to which each school belongs. For any given public school principal, then, the researcher can link to school-level and district-level data. All told, the SASS and PFS data files

contain data on approximately 7,500 public schools and public school principals from 3,000 public school districts.⁴⁴ Due to missing data, the analysis sample for this study consists of 5,490 public school principals.

In brief, the sample selection procedures for the SASS and PFS are as follows. In the base year, the SASS draws a nationally representative sample of public schools (schools are the SASS's primary sampling units)⁴⁵, each of which receives the SASS "school questionnaire." Once a school is selected for inclusion in the sample, that school's district and principal are automatically sent a "district questionnaire" and a "principal questionnaire," respectively. From within each of the sampled schools, a sample of teachers is drawn, and each of these teachers receives the SASS "teacher questionnaire." The separate questionnaires elicit a wealth of information from each set of respondents (teachers, principals, schools, and districts). Teachers and principals, for instance, answer survey questions about job satisfaction, pay satisfaction, and turnover intention, and provide individual-level demographic data. On the school and school district questionnaires, respondents are asked to provide a range of information about their school or district (e.g., school size, number of full-time teachers, percentage of African-American students).

During the follow-up year (one year after the SASS questionnaires are administered), each of the schools in the original sample is sent a principal status form, which asks a school official to provide information about the *current* occupational status of the previous school year's principal. In other words, the principal status form is used to determine what a school's

⁴⁴ All sample size numbers are rounded to comply with NCES restricted-use data guidelines.

⁴⁵ The SASS uses the 2006-07 Common Core of Data Nonfiscal School Universe data file for its sampling frame. The SASS sample is a stratified probability-proportionate-to-size sample. The details of the SASS sampling procedure are too complex to cover here. Note that the SASS sampling method necessitates the use of appropriate weighting techniques so that point estimates and standard errors are correctly calculated.

2007-08 principal is doing in 2008-09. A school's 2007-08 principal may still be serving as that school's principal in 2008-09; she may have moved to another school; she may have retired, etc. As I describe below, I use this follow-up year information to measure principal turnover.

Model and Method

The model used in this paper's empirical analysis is as follows:

$$Y_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p,$$

where Y_p is a vector of dependent variables, **constraints** is a vector of personnel constraints, **controls** is a vector of control variables, α_c represents between-county heterogeneity (county to county differences that might be associated with this study's independent variables of interest as well its dependent variables, leading to omitted variable bias), and ε_p is a principal-level error term. The contents of Y_p , which include my study's turnover and work attitudes variables, are described in detail below. In total, my analysis incorporates five distinct dependent variables—organizational turnover, organizational turnover intention, career turnover intention, negative work attitudes, and positive work attitudes—and so I am estimating five different models:

$$(1) \text{orgturn}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p,$$

$$(2) \text{orgint}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p,$$

$$(3) \text{carint}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p,$$

$$(4) \text{negatts}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p, \text{ and}$$

$$(5) \text{posatts}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p.$$

For each of these five models, the contents of the **constraints** vector, which I describe below, are the same. The contents of the **controls** vector differ across the five models. The work attitudes and turnover intention variables are treated as control variables in the organizational turnover model, while the work attitudes variables are treated as control variables in the turnover intention

models. Descriptive statistics for the study's dependent variables and constraint variables appear in table 3.1; descriptive statistics for control variables appear in table 3.2.

Dependent Variables (Y_p)

Organizational turnover. Organizational turnover is coded 1 if a school's base year principal is, during the follow-up year, serving as the principal of a different public school. It is coded 0 if a school's base year principal is still serving as principal of the base year school. I call this variable organizational turnover to differentiate it from other types of turnover, such as career turnover (i.e., leaving one's job for another job in an entirely different profession). I focus on organizational turnover in the current analysis because it is the most common type of principal turnover. Moreover, other types of turnover occur too infrequently in the analysis sample to make reliable estimation viable. As table 3.1 shows, of the 5,490 principals in the sample, 7% (0.07) were serving as principal of a different school during the follow-up year.

Organizational turnover intention. Organizational turnover intention is measured using the principal's response to the following base year survey item: "I think about transferring to another school." Response options include the following: 1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = strongly agree. Principals, on average, express a modest degree of organizational turnover intention—as table 3.1 shows, the organizational turnover intention variable has a mean of 1.65 (sd = 0.91).

Career turnover intention. Career turnover intention is measured using the principal's response to the following base year survey item: "If I could get a higher paying job, I'd leave education as soon as possible." Response options include the following: 1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = strongly agree. On average, as table 3.1

shows, principals express slightly greater levels of career turnover intention (mean = 1.77, sd = 0.93) than organizational turnover intention.

Negative work attitudes. I measure negative work attitudes using the sum of a principal's responses to three base year survey items: "The stress and disappointments involved in serving as principal at this school aren't really worth it;" "I don't seem to have as much enthusiasm now as I did when I began my career as a principal;" and "I think about staying home from school because I'm just too tired to go." Response options for each of these items are as follows: 1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = strongly agree. On average, principals' attitudes about their work are not overly negative. The mean for the negative work attitudes variable, which ranges from a minimum negativity of three to a maximum negativity of 12, is 4.84 (sd = 2.03).⁴⁶

Positive work attitudes. I measure positive work attitudes using a principal's response to a single item: "I like the way things are run in this district." Response options for this item are as follows: 1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = strongly agree. Teachers tend to agree with this statement—table 3.1 shows that the mean for this variable is 3.07 (sd = 0.82).

⁴⁶ A principal components factor analysis of the three items used to measure negative work attitudes suggests that these items are measuring a single underlying construct (with the first factor accounting for 61% of the total factor space and the second factor accounting for only 22% of the total factor space).

Table 3.1. Descriptive statistics for dependent variables and constraint variables

	Mean	SD	Min	Max
Dependent variables:				
Organizational turnover	0.07	0.25	0	1
Organizational turnover intention	1.65	0.91	1	4
Career turnover intention	1.77	0.93	1	4
Negative work attitudes	4.84	2.03	3	12
<i>Based on teachers' responses to three items:</i>				
<i>1. The stress and disappointments involved in serving as principal aren't really worth it; 2. I don't seem to have as much enthusiasm now as when I began my career as a principal; 3. I think about staying home from school because I'm just too tired to go.</i>				
I like the way things are run in this district	3.07	0.82	1	4
Perceived dismissal barriers:				
Personnel policies	0.50	0.50	0	1
Termination decisions not upheld	0.19	0.40	0	1
Length of time required for termination process	0.61	0.49	0	1
Effort required for documentation	0.67	0.47	0	1
Tight deadlines for completing documentation	0.36	0.48	0	1
Tenure	0.71	0.45	0	1
Teacher associations or unions	0.62	0.49	0	1
Personal discomfort	0.14	0.35	0	1
Difficulty obtaining suitable replacements	0.22	0.42	0	1
Resistance from parents	0.05	0.21	0	1
Pay for performance:				
NBPT standards certification	0.50	0.50	0	1
Excellence in teaching	0.11	0.31	0	1
Recruit or retain teachers to teach in a less desirable location	0.14	0.35	0	1
Recruit or retain teachers to teach in fields of shortage	0.28	0.45	0	1
Influence in school decision-making:				
Principal	26.07	2.06	12	28
Teachers	22.32	3.27	8	28
State Department of Ed.	18.84	4.00	0	28
School board	19.65	4.48	0	28
District staff	21.66	4.43	0	28
Curriculum specialists	16.02	6.84	0	28
Parent association	12.16	4.84	0	28
Difficulty filling vacancies: Core subjects	3.10	3.55	0	17

Notes: N = 5,490

Independent Variables: Personnel Constraints

Dismissal barriers. Barriers to dismissal are measured using the following base year survey question: "In your opinion, are the following considered barriers to the dismissal of poor-performing or incompetent teachers in this school: 1. Personnel policies, 2. Termination decisions not upheld, 3. Length of time required for termination process, 4. Effort required for documentation, 5. Tight deadlines for completing documentation, 6. Tenure, 7. Teacher associations or unions, 8. Dismissal is too stressful and/or uncomfortable for you, 9. Difficulty in obtaining suitable replacements, 10. Resistance from parents." The principal answers yes or no to each of these individual items. Not all of these items measure organizationally imposed constraints (e.g., dismissal is too stressful and/or uncomfortable for you, difficulty in obtaining suitable replacements), but they do all represent some type of constraint on managerial action. If a manager is too uncomfortable to perform certain necessary managerial functions, such discomfort is a self-imposed constraint that might affect the decision to leave the managerial profession. For each of the ten items, I create a dummy that equals one if the principal perceives a dismissal barrier and zero if she does not.

Table 3.1 shows that tenure is the most prevalent of the ten dismissal barriers—71% (0.71) of principals view it as an obstacle to the dismissal of poorly performing teachers. Additionally, effort required for documentation (67%), teachers associations or unions (62%), and the length of time required for termination processes (61%) are all commonly perceived to be obstacles. By contrast, only 5% (0.05) of teachers perceive resistance from parents to be a dismissal barrier. As the table shows, the remaining barriers fall somewhere between these two poles in terms of frequency.

Pay-for-performance. Information for this study's pay-for-performance variables comes from the SASS school district questionnaire. The school district questionnaire asks, "Does this

district currently use any pay incentives such as cash bonuses, salary increases, or different steps on the salary schedule to—(a) reward teachers who have attained National Board for Professional Teaching Standards certification, (b) reward excellence in teaching, (c) recruit or retain teachers to teach in a less desirable location, (d) recruit or retain teachers to teach in fields of shortage?" For each of these four incentive programs, I create a dummy variable that equals one if the district uses the program and zero if it does not. Pay-for-performance programs that reward teachers who attained National Board for Professional Teaching Standards certification are the most common of the four programs listed in table 3.1. As the table shows, 50% of principals work in districts that use this type of program. Programs that reward excellence in teaching are the least common, with 11% of principals reporting some such program. Finally, 14% of principals report that their school districts have pay-for-performance programs intended to recruit or retain teachers to teach in a less desirable location, while 28% of principals report that their districts have programs intended to recruit or retain teachers to teach in fields of shortage.

Non-managerial influence in organizational policy. The SASS principal questionnaire asks principals about the degree of influence that they and other actors have in various areas of school-level policy. The actors whose influence it asks about (in addition to the principal) are as follows: state department of education, local school board, school district staff, teachers, curriculum specialists, and parent associations. The school-level policy areas it asks about are as follows: setting performance standards for students, establishing curriculum, determining the content of in-service professional development programs for teachers, evaluating teachers, hiring new full-time teachers, setting discipline policy, and deciding how the school budget will be spent. Principals indicate how much influence each actor has in each policy area; response

options are as follows: 1 = no influence, 2 = minor influence, 3 = moderate influence, 4 = major influence.

For each actor (principal and non-principal), I use the sum of that actor's influence across all seven school-level policy areas to measure influence in school-level policy. Thus, I have six measures of non-managerial influence in total (state department of education, local school board, school district staff, teachers, curriculum specialists, and parent associations) and one measure of managerial influence (principal).⁴⁷ The descriptive statistics shown in table 3.1 suggest that principals tend to have more influence in school-level policy than non-principals. The principal influence variable, which ranges from a low of 12 to a high of 28, has a mean of 26.07. Among non-principals, teachers have the most influence in school-level policy (mean = 22.32), followed by district staffs (21.66), school boards (19.65), state departments of education (18.84), curriculum specialists (16.02), and parent associations (12.16).

Difficulty filling vacancies. The SASS school questionnaire asks a school official to indicate how difficult it was for base year schools to fill vacant teaching positions in a variety of fields, including the following core subject areas: English/language arts, social studies, mathematics, biology or life sciences, and the physical sciences. For each of these subject areas, response options include the following: 1 = easy, 2 = somewhat difficult, 3 = very difficult, and 4

⁴⁷ For each actor, I perform a principal components factor analysis on the seven school-level policy items to assess whether the seven items are measuring a single underlying factor. To reasonably claim that multiple items measure a single underlying construct (or factor), a factor analysis should show that one factor explains considerably more of the multiple items' covariance than any other factor and that each individual item loads heavily on the dominant factor. This is in fact what I observe for all actors considered in the current analysis except principals and teachers. Principals and teachers depart from the ideal measurement conditions only slightly, though, showing modest factor loadings for some individual items. Experimenting with another measurement approach—summing, for each actor, only the survey items that are relevant to personnel decisions (evaluating teachers, hiring new full-time teachers)—yields the same regression results (in terms of sign and significance) as the (original) approach described above, and so I use the original approach. I also calculate a Cronbach's alpha for each actor to assess the measurement reliability of the seven summed items. Alphas of 0.7 or higher are typically considered acceptable. For all actors considered in the current analysis, except principals, the calculated alphas meet this standard. The alpha for principals is 0.65, which is below the 0.7 standard but high enough that I am still comfortable with the reliability of the seven summed items used to measure principals' influence in school-level policy.

= could not fill the vacancy.⁴⁸ I use the sum of a school's responses across all five core subject areas to measure difficulty filling vacancies.⁴⁹ On average, schools experience low amounts of difficulty in filling vacancies. The mean for this variable, which ranges from a minimum of zero to a maximum of 17, is approximately 3.10.

Control Variables

In addition to the key independent variables described above, this study's five models incorporate a number of control variables. These variables fall roughly into two categories: (1) principal characteristics and attitudes and (2) school characteristics. Control variables in the principal characteristics and attitudes category are as follows: race, gender, age, experience as a principal, years as principal of current school, education (highest degree earned), salary, principal's view of whether the faculty and staff "like being" at their school, principal's perception of school problem frequency, and the number of hours the principal works during a typical week of school. Descriptive statistics for all control variables, as well as short explanations when necessary, appear in table 3.2.

Control variables in the school characteristics category are as follows: total enrollment, student/teacher ratio, %free lunch students (proxy for low-income students), %black students, %Hispanic students, school location (urban, rural, suburban), school level (primary, middle, high, combined), scheduled salary for a teacher with a bachelor's degree and no experience,

⁴⁸ There are two additional response options that require some discussion: (1) No positions and (2) No vacancies. When a school has no positions or vacancies in a given field, this most plausibly reflects a lack of difficulty in filling vacancies—if there are no positions or vacancies in a school, a school does not have to go to the trouble of filling positions or vacancies. This reasoning suggests that a response of (1) No positions or (2) No vacancies should be coded zero to indicate no difficulty. Accordingly, I code these two responses as zero.

⁴⁹ As with the principal and non-principal influence survey items, I perform a factor analysis (principal components) on the five items used to measure difficulty filling vacancies to assess their validity and calculate a Cronbach's alpha to gauge their reliability. The results of the factor analysis suggest that the five items are indeed measuring a single underlying construct, and the Cronbach's alpha (0.78) suggests that the five items are reliable.

salary of the highest paid teacher in the school district, administrative span of control (full-time vice-principals per full-time teacher), administrators per student, support staff per student, instructional aides per student, a dummy indicator for whether the principal's school has a library, average daily attendance, a dummy indicator equal to one if the principal's school made adequate yearly progress during the 2006-07 school year, expulsions per student, and suspensions per student. Note also, as mentioned above, that the two dependent work attitudes variables and the two dependent turnover intention variables serve as controls in the model of organizational turnover, while the two dependent work attitudes variables serve as controls in the turnover intention models.

Table 3.2. Descriptive statistics for control variables

	Mean	SD	Min	Max
Principal race:				
<i>White</i>	0.84	0.37	0	1
<i>Black</i>	0.09	0.29	0	1
<i>Asian</i>	0.01	0.10	0	1
<i>Native Hawaiian</i>	0.01	0.07	0	1
<i>American Indian</i>	0.01	0.12	0	1
<i>Hispanic</i>	0.04	0.19	0	1
Principal gender: Male	0.58	0.49	0	1
Principal age	48.67	8.77	24	86
Years of experience as a principal	7.63	7.05	0	44
Years as principal of current school	4.25	4.75	0	38
Principal education (highest degree):				
<i>Bachelor's degree</i>	0.01	0.11	0	1
<i>Master's degree</i>	0.61	0.49	0	1
<i>Educational specialist</i>	0.29	0.45	0	1
<i>Doctorate</i>	0.09	0.29	0	1
Principal salary (1000s)	84.06	19.52	21	190
Faculty and staff like being here	3.51	0.70	1	4
<i>Response options: 1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = strongly agree</i>				
Perception of school problem frequency	12.46	3.28	6	29
<i>Sum of principals' responses to six items (How often do the following types of problems occur at this school?):</i>				
<i>1. Physical conflicts among students, 2. Student bullying, 3. Student verbal abuse of teachers, 4. Widespread disorder in classrooms, 5. Student acts of disrespect for teachers, 6. Gang activities.</i>				
<i>Response options: 1 = never happens, 2 = happens on occasion, 3 = happens at least once a month, 4 = happens at least once a week, 5 = happens daily.</i>				
Hours worked during typical week	59.75	11.74	0	168
Total enrollment	676.17	559.99	7	4,434
Student/teacher ratio	13.48	4.85	1.51	73.01
%Free Lunch Students	42.24	27.24	0	100
% Black Students	14.42	23.71	0	100
% Hispanic Students	12.37	20.58	0	100

Notes: N = 5,490. Continued on next page.

Table 3.2 continued. Descriptive statistics for control variables

	Mean	SD	Min	Max
School location:				
<i>Urban</i>	0.22	0.41	0	1
<i>Suburban</i>	0.44	0.50	0	1
<i>Rural</i>	0.34	0.48	0	1
School level:				
<i>Primary School</i>	0.38	0.49	0	1
<i>Middle School</i>	0.14	0.35	0	1
<i>High School</i>	0.36	0.48	0	1
<i>Combined School</i>	0.12	0.33	0	1
Teacher salary (BA)	33.78	4.94	14.63	53.51
Highest teacher salary in district	62.82	13.92	20	128.41
Span of control	0.02	0.02	0	0.50
Administrators per student	0.00	0.01	0	0.14
Support staff per student	0.01	0.02	0	0.56
Instructional aides per student	0.02	0.04	0	1.57
School has library (Yes)	0.96	0.20	0	1
Average daily attendance (%)	92.87	12.06	0	100
School Made Adequate Yearly Progress	0.69	0.46	0	1
Expulsions per student	<0.01	0.03	0	2.14
Suspensions per student	0.18	0.43	0	14.24

Notes: N = 5,490.

Estimation

Recall that the five models I am estimating are the following:

$$(1) \text{orgturn}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p,$$

$$(2) \text{orgint}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p,$$

$$(3) \text{carint}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p,$$

$$(4) \text{negatts}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p, \text{ and}$$

$$(5) \text{posatts}_p = \beta \cdot \text{constraints} + \Pi \cdot \text{controls} + \alpha_c + \varepsilon_p.$$

Recall also that organizational turnover is a dichotomous dependent variable; organizational turnover intention has four ordered categories (1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = strongly agree); career turnover intention has the same four ordered categories; negative work attitudes equals the sum of three survey items and ranges from 3 to 12; and positive work attitudes has four ordered categories (same as above).

While convention would dictate the use of logistic regression to estimate model 1 and the use of ordered logit to estimate models 2, 3, and 5, I treat each dependent variable as continuous and use ordinary least squares to estimate all five models. The main reason for using this approach is that it allows for the inclusion of county-level fixed effects, which substantially enhance the credibility of the models' estimated coefficients.⁵⁰ County fixed effects control for county to county differences that might be associated with the above models' independent variables of interest *and* their dependent variables. Controlling for these differences minimizes omitted variable bias as a threat to the validity of the estimated coefficients.⁵¹ A secondary reason for using this approach is that it makes substantive interpretation of the estimated coefficients much more straightforward—in all models, each estimated coefficient represents the change in a dependent variable associated with a one unit increase in a given independent variable. Since it is reasonable to assume that the principal-level error terms will be correlated within school districts, I cluster the models' standard errors by school district.

⁵⁰ Fixed effects can be particularly problematic when used in models with dichotomous outcomes. If the outcome variable exhibits little variation (i.e., if there are few 1s and many 0s in the sample, as in the present case), numerous cases will likely be dropped from the analysis. More specifically, if the outcome variable exhibits no variation (all 0s, for instance) within a fixed effects region (here, all 0s within a county), the cases from that region will be dropped because the outcome variable will be perfectly collinear with the fixed effect.

⁵¹ I use county-level fixed effects instead of school district-level fixed effects because my pay-for-performance variables are measured at the district level, and would therefore be perfectly collinear with district fixed effects. Consequently, if I used district fixed effects, my four pay-for-performance variables would be dropped from the analysis.

Results

County fixed effects regression results for the five models shown above appear in table 3.3. Each dependent variable has its own column, with the constraint variables appearing down the left-hand side of the table. The table shows results only for the constraint variables, but it is important to note that all models were estimated with the control variables listed above. The control variable results are suppressed due to space limitations. Clustered standard errors appear in parentheses. I begin by examining the ten perceived dismissal barrier constraints.

Table 3.3. County fixed effects regression results

	Organizational turnover	Organizational turnover intention	Career turnover intention	Negative work attitudes	I like the way things are run in this district
Perceived dismissal barrier:					
Personnel policies	-0.012 (0.011)	-0.032 (0.032)	0.097*** (0.033)	0.199** (0.078)	-0.049 (0.031)
Termination decisions not upheld	-0.006 (0.013)	-0.011 (0.037)	0.060 (0.037)	0.128 (0.088)	-0.176*** (0.035)
Length of time required for termination process	0.000 (0.012)	0.031 (0.035)	-0.030 (0.036)	0.048 (0.084)	-0.004 (0.034)
Effort required for documentation	-0.008 (0.012)	-0.030 (0.036)	-0.024 (0.037)	0.304*** (0.086)	-0.097*** (0.035)
Tight deadlines for completing documentation	0.001 (0.011)	0.037 (0.032)	0.053* (0.032)	0.106 (0.076)	-0.025 (0.030)
Tenure	0.032*** (0.012)	0.038 (0.036)	-0.019 (0.036)	-0.055 (0.086)	-0.057* (0.034)
Teacher associations or unions	-0.017 (0.012)	-0.007 (0.035)	-0.026 (0.036)	0.217** (0.084)	-0.032 (0.034)
Personal discomfort	0.008 (0.014)	0.079** (0.040)	0.019 (0.041)	0.626*** (0.097)	-0.062 (0.039)
Difficulty obtaining suitable replacements	0.014 (0.013)	-0.008 (0.036)	-0.042 (0.037)	0.185** (0.087)	-0.022 (0.035)
Resistance from parents	0.015 (0.023)	0.057 (0.067)	-0.009 (0.068)	0.609*** (0.161)	-0.011 (0.064)
Pay for performance:					
NBPT standards certification	0.007 (0.014)	-0.058 (0.040)	0.023 (0.041)	-0.109 (0.097)	0.006 (0.039)
Excellence in teaching	-0.028 (0.022)	-0.032 (0.064)	-0.022 (0.065)	0.030 (0.154)	0.064 (0.062)

Notes: N = 5,490. *p<0.1 **p<0.05 ***p<0.01. Clustered (by district) standard errors are in parentheses. Continued on next page.

Table 3.3 continued. County fixed effects regression results

	Organizational turnover	Organizational turnover intention	Career turnover intention	Negative work attitudes	I like the way things are run in this district
Pay for performance:					
Recruit or retain teachers to teach in a less desirable location	-0.002 (0.027)	-0.084 (0.078)	-0.142* (0.080)	0.187 (0.188)	-0.145* (0.075)
Recruit or retain teachers to teach in fields of shortage	-0.023 (0.017)	0.059 (0.049)	0.062 (0.050)	-0.177 (0.118)	0.052 (0.047)
Influence in school decision-making:					
Principal	0.003 (0.003)	-0.015* (0.008)	-0.003 (0.008)	-0.071*** (0.019)	0.047*** (0.008)
Teachers	-0.002 (0.002)	0.002 (0.006)	-0.009 (0.006)	-0.005 (0.013)	0.003 (0.005)
State Department of Ed.	0.000 (0.001)	0.000 (0.004)	0.011*** (0.004)	-0.005 (0.010)	0.004 (0.004)
School board	-0.000 (0.001)	0.006 (0.004)	-0.007* (0.004)	-0.014 (0.009)	0.011*** (0.004)
District staff	-0.001 (0.001)	-0.000 (0.004)	0.002 (0.004)	-0.011 (0.009)	0.011*** (0.003)
Curriculum specialists	0.000 (0.001)	-0.001 (0.002)	0.001 (0.002)	-0.006 (0.006)	0.004* (0.002)
Parent association	0.001 (0.001)	-0.002 (0.004)	0.002 (0.004)	-0.015* (0.008)	-0.003 (0.003)
Difficulty filling vacancies: Core subjects	0.001 (0.002)	-0.001 (0.005)	0.002 (0.005)	0.039*** (0.012)	-0.002 (0.005)
R squared	0.034	0.250	0.233	0.092	0.095

Notes: N = 5,490. *p<0.1 **p<0.05 ***p<0.01. Clustered (by district) standard errors are in parentheses.

Note first the results for the personnel policies dismissal barrier variable, which is the first variable shown in table 3.3. I hypothesized (H_1) that the presence of perceived dismissal barriers would be positively associated with organizational turnover, organizational turnover intention, career turnover intention, and negative work attitudes. Conversely, I hypothesized that perceived dismissal barriers would be negatively associated with positive work attitudes. The basic logic underpinning these expectations was that public managers will prefer to work in settings in which they are able to use incentives to motivate employees to settings in which they are unable to do so. More specifically, the existence of a dismissal barrier will make it difficult for public managers to issue credible dismissal threats to their employees, thereby attenuating managerial capacity to induce employee work effort. As expected, the personnel policies dismissal barrier variable is positive and statistically significant in both the career turnover intention model and the negative work attitudes model. Specifically, the results suggest that principals who perceive personnel policies to be a dismissal barrier report, on average, 0.097 more units of career turnover intention than principals who do not. At the same time, principals who perceive personnel policies to be a dismissal barrier exhibit higher levels of negative work attitudes (higher by 0.199 units) than principals who do not perceive personnel policies to be a dismissal barrier.

Next, note that when termination decisions are not upheld, principals tend to report lower levels of positive work attitudes. More precisely, principals who believe that their termination decisions are not supported exhibit, on average, 0.176 fewer units of positive work attitudes than principals who do believe that their termination decisions are supported. By contrast, a lengthy termination process does not appear to bother public school principals. As the results show, principals who perceive the length of time required to navigate termination processes to be a

dismissal barrier are no more likely to leave their schools than principals who do not. Nor do principals who view length of time to be dismissal barrier express higher levels of organizational turnover intention, career turnover intention, or negative work attitudes. Finally, time-constrained principals do not report liking the way things are run in their school districts any less than unconstrained principals.

Cumbersome aspects of the termination documentation process are associated with higher levels of negative work attitudes, lower levels of positive work attitudes, and higher levels of career turnover intention. Specifically, principals who view documentation effort to be a dismissal barrier report, on average, 0.304 more units of negative work attitudes than principals who do not view documentation effort to be a dismissal barrier. Additionally, effort-constrained principals report 0.097 fewer units of positive work attitudes than unconstrained principals. And principals facing tight documentation deadlines tend to report greater levels (0.053 more units) of career turnover intention than principals not facing tight documentation deadlines.

The next of the ten perceived dismissal barriers—teacher tenure—is the only one that has a statistically significant association with actual organizational turnover. Since the organizational turnover results were obtained using OLS, the statistically significant coefficient of -0.032 indicates that the turnover probability among tenure-constrained principals is, on average, 3.2 percentage points lower than the turnover probability among unconstrained principals. Among all ten of the dismissal barriers shown in table 3.3—indeed, among all managerial constraints examined herein—teacher tenure alone frustrates principals to the point that they actually switch schools. In addition to its positive association with organizational turnover, teacher tenure also exhibits a negative association with positive work attitudes. As table 3.3 shows, when tenure-constrained principals are asked about whether they like the way

things are run in their school districts, they report a level of agreement with this question that is about 0.06 points lower (on a 4-point scale) than the level of agreement reported by unconstrained principals.

All four of the remaining perceived dismissal barriers—teacher associations or unions, personal discomfort, difficulty obtaining suitable replacements, and resistance from parents—are positively associated with negative work attitudes. Of these, the personal discomfort result is the largest in magnitude. Principals who report discomfort with the termination process score, on average, 0.626 points higher on the negative work attitudes scale than principals who do not report discomfort. Resistance from parents follows closely behind personal discomfort, with a statistically significant positive coefficient of 0.609. Teacher associations (or unions) and difficulty obtaining suitable replacements appear to be less burdensome dismissal barriers, with coefficients of 0.217 and 0.185, respectively. In addition to exhibiting the largest association with negative work attitudes, personal discomfort is also positively associated with organizational turnover intention, though not with actual organizational turnover. Personal discomfort with the termination process, then, induces principals to consider switching schools, but does not induce them to actually switch.

Overall, the dismissal barrier results provide considerable support for hypothesis 1, which posited that perceived dismissal barriers would be positively associated with organizational turnover, organizational turnover intention, career turnover intention, and negative work attitudes, and negatively associated with positive work attitudes. Though all dismissal barriers are not significantly related to all dependent variables, all 13 statistically significant coefficients are in the hypothesized direction. Additionally, 34 of the 50 total dismissal barrier coefficients

carry the expected sign. I next consider this study's sole managerial anti-constraint—performance pay.

Recall the theoretical logic behind this study's pay-for-performance variables: Public managers working in organizations with performance pay systems will have access to an important motivational tool; public managers working in organizations without these systems will not have access to this tool. Following this line of reasoning, I hypothesized (H_2) that pay-for-performance programs would be negatively associated with actual turnover, turnover intention, and negative work attitudes, and positively associated with positive work attitudes. The results provide minimal support for this hypothesis. Only one of the 20 total pay-for-performance coefficients is statistically significant in the expected direction. Principals working in districts with pay-for-performance programs intended to recruit or retain teachers to teach in a less desirable location express lower levels of career turnover intention than principals working in districts without these programs. More precisely, principals who have access to this type of program report, on average, 0.142 fewer units (on a 4-point scale) of career turnover intention than principals who do not have access to such a program. Again, though, this is the only pay-for-performance variable consistent with theoretical expectations, suggesting that principals generally do not perceive performance pay to be a useful motivational tool.

In my third hypothesis (H_3), I stated that non-managerial influence in school policy would be positively associated with organizational turnover, organizational turnover intention, career turnover intention, and negative work attitudes. Conversely, I suggested that non-managerial influence would be negatively associated with positive work attitudes. The theoretical logic underlying these expectations was that non-managerial influence in school policy would impinge on principals' influence, making it difficult for principals to manage

unilaterally. Before considering the non-managerial influence variables, note that the amount of influence held by principals themselves is negatively associated with organizational turnover intention and negative work attitudes, and positively associated with positive work attitudes. Though hypothesis 3 concerns non-managerial influence, not managerial influence, these results support the notion that managers will value leverage over organizational policy.

The state department of education influence variable is the only non-managerial influence variable that provides some measure of support for H₃. Specifically, table 3.3 shows that a one unit increase in policy influence held by state departments of education is associated, on average, with a 0.011 unit increase in principals' career turnover intentions. When principals must share influence with state departments of education, they consider leaving their profession. By contrast, the remaining statistically significant results run counter to hypothesis 3. The amount of influence in school policy held by local school boards is negatively associated with career turnover intention and positively associated with positive work attitudes—that is, whether principals like the way things are run in their districts. At the same time, the amount of influence held by district staff and curriculum specialists is also positively associated with principals' positive work attitudes. Finally, the level of influence exercised by parent associations is negatively associated with principals' negative work attitudes.

Though these non-managerial influence findings are unexpected, they may be explainable. Hypothesis 3 suggests that non-managerial influence will be bothersome to managers, but it is also plausible that non-managerial influence could be a positive force. High levels of non-managerial influence could reflect high levels of constructive involvement by non-managerial actors. Given that influence held by local school boards, district staffs, curriculum specialists, and parent associations appears to be viewed as constructive by principals, while

influence held by state departments of education appears to be viewed as bothersome, suggests that influence held by distant actors might have a different impact on principals' work attitudes than influence held by local actors. Influence exercised by distant actors might be viewed as meddlesome if distant actors have little information about local policy contexts—if, in other words, they are viewed as being out of touch with local conditions. By contrast, influence exercised by local actors might be viewed as constructive because interested local actors tend to have considerable information about local policy contexts. In principals' eyes, local actors' claims on influence may be more legitimate than distant actors' claims on influence.

The final constraint considered in this study was the degree of difficulty encountered by principals seeking to fill organizational vacancies. Hypothesis 4 (H_4) posited that this difficulty would be positively associated with organizational turnover, organizational turnover intention, career turnover intention, and negative work attitudes. Conversely, H_4 stated that difficulty filling vacancies would be negatively associated with positive work attitudes. The reasoning underlying this hypothesis was that public managers value the ability to quickly locate qualified workers, since worker quality feeds into organizational performance. Since only one out of the five difficulty coefficients is statistically significant in the expected direction, H_4 receives minimal support. The results suggest that when public school principals encounter difficulty filling vacant teaching positions, they tend to express higher levels of negative work attitudes. More precisely, a one unit increase in difficulty is associated with an increase in negative work attitudes of 0.039 units. An increase of one standard deviation in difficulty filling vacancies (3.55 units) would therefore be associated with an increase in negative work attitudes of about 0.14 units.

Conclusion

Public managers care about organizational performance because they are held accountable for it, and so it is reasonable to assume that they will value the capacity to influence organizational performance—that is, that they will value managerial leverage over organizational-level outcomes. Since managerial leverage over organizational-level performance requires leverage over individual-level performance, public managers will prefer to work in settings in which they are freely able to make personnel decisions that they think will ultimately bolster organizational-level performance.

This study, which examined four specific managerial constraints—perceived dismissal barriers, performance pay (an anti-constraint), non-managerial influence in organizational policy, and difficulty filling organizational vacancies—provides some support for this proposition. Of these four constraints, perceived dismissal barriers followed theoretical expectations most consistently, providing a good deal of support for the general proposition that public managers prefer to manage in unconstrained settings. The study's four pay-for-performance variables; its non-managerial influence variables; and its difficulty filling vacancies variables provided less support.

The lack of overwhelming support for the general proposition that public managers value autonomy might imply that dealing with constraints is par for the course in the public sector. In other words, public managers accept that their leverage over individual-level and organizational-level performance will be limited, and do their best to manage in the face of constraints. Only particularly onerous managerial constraints, such as employee tenure, appear to frustrate public managers to the point that they actually move to another organization.

The implication that public managers are accustomed to managing in constrained organizational settings raises a few interesting questions for future research. For instance, are

public managers less likely to tolerate managerial constraints in some settings than in other settings? Presumably, managerial constraints will be more frustrating in situations when managers need (or feel they need) the freedom to get things done. This could apply in situations when a public organization is experiencing serious performance struggles. To a public manager under pressure to turn things around, managerial constraints might seem particularly burdensome and perhaps even illegitimate. By contrast, a public manager at the helm of a well-functioning organization might view managerial constraints as healthy checks on unilateral managerial power. Such a manager might welcome the involvement of other actors in organizational policy, while a manager under pressure might resent it.

Managerial autonomy was a major theme of the New Public Management and the Reinventing Government movements. Those movements emphasized its importance to organizational performance. In the current study, I have examined its importance to public managers' work attitudes and turnover decisions. Ideally, public sector organizations should strive to retain managers of high quality. Identifying constraints that induce managers to leave their jobs can contribute to this effort.

CHAPTER 4

MOTIVATING PUBLIC SECTOR WORKERS: A CASE STUDY OF THE WASHINGTON, DC PUBLIC SCHOOL SYSTEM DURING THE MICHELLE RHEE ERA

One of the central questions of organization theory—and of public sector organization theory in particular—is how organizations can effectively motivate their employees (Miner, 2005; Perry and Wise, 1990; Wright, 2001; Wright, 2004). One seemingly simple answer to this question is to pay current employees enough to ensure that they perform adequately, and to pay them more for performing more than adequately. Pay-for-performance programs, which have been gaining popularity in the public sector, embody this simple idea (Bowman 2010). Though differing in their particulars, all of these programs aim to motivate employees to work harder (and better) by providing a monetary bonus for the achievement of a specified outcome.⁵² For instance, a public school teacher might be promised a \$5,000 bonus if a certain percentage of the teacher's students pass a standardized test. While based on an appealingly simple idea, though, these programs have proved difficult to successfully implement, especially in the public sector (see, e.g., Perry et al., 2006; Perry et al., 2009; Bowman, 2010).⁵³ Among other problems, it is often difficult to measure employee performance; employees do not always believe that bonuses will be forthcoming; employees sometimes view these programs as punitive rather than remunerative; public sector employees do not necessarily value monetary rewards highly; and performance-pay programs can have negative impacts on employee morale (Dixit, 2002; Bohnet and Eaton, 2003; Perry et al., 2006; Lundstrom, 2012; Farrell and Morris, 2004).

⁵²A related purpose of these programs is to attract qualified individuals to work for an organization by offering the potential to earn monetary bonuses. Put differently, these programs are intended to motivate current employees and to encourage qualified prospective employees to select into an organization (Podgursky and Springer 2007).

⁵³ Moreover, some have argued that they are normatively inappropriate in the context of public service work (Thompson, 2006)

Another seemingly simple answer to the question of how organizations can effectively motivate their employees is to threaten to dismiss them if they do not perform at an acceptable level (FitzRoy and Kraft, 1995; Jackofsky, 1984). Like pay-for-performance, though, this idea's simplicity can be deceptive. In practice, it can be difficult for organizations—particularly public sector organizations—to establish credible dismissal threats. Public sector labor unions, for instance, place limits on the disciplinary actions that public organizations can impose on their employees (Dixit, 2002; Strunk and Grissom, forthcoming). And if dismissal threats cannot be made credible, their motivational power is undermined (Ichino and Riphahn 2001). Another problem with dismissal threats is that they can negatively impact employee morale and, by extension, organizational performance. If dismissals appear to be capricious, employees—including high-quality employees—will seek safer employment (Kraft, 1991).

Nowhere in the public sector has the use of these two incentives—performance-pay and dismissal threats—been more visible than in Washington, DC, where former DC Public Schools Chancellor Michelle Rhee made them the central components of her strategy to induce DC's public school teachers to comply with formal policy goals. Rhee became Chancellor of the Washington, DC public school system in June 2007. Given sweeping power by Mayor Adrian Fenty to improve the city's schools, she embarked on an ambitious reform agenda, promising to make Washington, DC the highest-performing urban school district in the country.^{54,55} The DC

⁵⁴ As noted in-text, Rhee's stated (organizational-level) goal was to make Washington, DC the highest performing urban school district in the country. At the teacher-level, her general goal was for teachers to be highly effective, as measured by the school system's IMPACT evaluation system, which I describe below. As stated in the IMPACT guidebook, which is distributed to all DCPS teachers, "The primary purpose of IMPACT is to help you become more effective in your work."

⁵⁵ In October 2010, following Adrian Fenty's primary election loss to Vincent Gray, Rhee resigned her position. Though there is disagreement regarding how much progress DC's public school students made during her three year tenure, Rhee concedes that her goal of making Washington, DC the highest-performing urban school district in the country went unfulfilled (see Jaffe, H. December 2010. *Washingtonian*. "The Education of Michelle Rhee." <<http://www.washingtonian.com/articles/people/17501.html>>

school system's teachers were the focus of these reform efforts. Rhee hoped to weed out the system's bad teachers, retain and reward the system's good teachers, and attract new teaching talent to its ranks. In the parlance of principal-agent theory, Rhee (the principal) desired gains in student performance and wanted to induce compliance with this goal among DC public school teachers (the agents). She also hoped to encourage qualified prospective teachers to select into the DC public school system.

The qualitative analysis undertaken in this chapter capitalizes on Washington, DC's prominence in ongoing education reform debates, and on Michelle Rhee's recent efforts to induce teachers' compliance with formal policy goals, to learn about how public school teachers view and react to performance-pay systems and dismissal threats. The analysis aims to complement the large-N, quantitative approach of the previous two empirical chapters by delving more deeply into the issue of teacher turnover and asking whether the incentives described above do in fact induce compliance, or whether they have adverse effects on teacher motivation and, consequently, on teachers' attachment to their schools. A regression coefficient can suggest whether and how X tends to affect Y in a population (e.g., whether performance-pay is associated with higher levels of teacher motivation), but it communicates little else. Qualitative interviews can provide insights into why (or why not), exactly, X affects Y. Or, as Jick (1979) argues, qualitative methods can "enrich our understanding by allowing for new or deeper dimensions to emerge" (604).

Below, I proceed as follows. First, I describe the two primary components of Rhee's compliance efforts—(1) pay-for-performance and (2) the threat of dismissal. Second, I sketch the theoretical motivations for each of these compliance efforts and discuss how they can be expected to affect teachers' turnover intentions and actual turnover decisions. Next, I describe

this chapter's data, which come from 12 interviews with current and former public school teachers who work (or worked) in the Washington, DC school system or in neighboring school systems. I then describe my results and conclude with a discussion of how these results might inform the design and implementation of public sector pay-for-performance programs.

The DC Context: *IMPACTplus* and Dismissal Threats

In June 2010, after 2 1/2 years of bargaining with Michelle Rhee and other representatives of the DC public school system (DCPS), the Washington Teacher's Union ratified a new teacher contract. Soon after, the DC Council approved the agreement. The contract⁵⁶ itself did not detail the specifics of a pay-for-performance plan; it merely listed a set of general parameters⁵⁷ for the plan to follow and directed that the Washington Teacher's Union and the DCPS work together to iron out the plan's details. In September 2010, the DCPS announced the plan's implementation and made public its details. The final plan, called *IMPACTplus*,⁵⁸ is a voluntary pay-for-performance system that rewards teachers in two ways: with (1) an annual bonus and (2) an increase in base salary.

To qualify for the annual bonus in a given school year, a teacher must earn a "highly effective"⁵⁹ rating on his or her IMPACT evaluation⁶⁰ during that year. A teacher's rating is

⁵⁶ A copy of the contract can be downloaded at <<http://media.washingtonpost.com/wp-srv/metro/documents/teachercontract060210.pdf>>

⁵⁷ Only one of the parameters listed in the contract is of significant practical import—the directive that the final plan, whatever its details, be voluntary. Most of the other parameters, which are listed in article 36 of the contract, are vague and unspecific (e.g., "36.3.1.1. The program shall be constructed to support improved achievement for all students" and "36.3.1.7. The best programs are easily understood and focus on causal effect").

⁵⁸ The *IMPACTplus* guidebook can be downloaded at <<http://dcps.dc.gov/DCPS/Files/downloads/TEACHING%20&%20LEARNING/IMPACT/IMPACTplus/DCPS-IMPACTplus-guidebook-Sept-2010.pdf>>

⁵⁹ A teacher can be rated ineffective, minimally effective, effective, or highly effective. The details of the IMPACT evaluation system are too complex to describe here. I simply note that the IMPACT evaluation system attempts to measure multiple aspects of teacher effectiveness. IMPACT evaluation guidebooks are available for download at

based primarily on teacher-level value-added student achievement data (if available) and five formal classroom observations (three by the teacher's principal or assistant principal; two by an impartial, third-party observer called a master educator). During these formal observations, the observer judges whether the teacher demonstrates competency across a range of predetermined criteria (e.g., explains content clearly, engages students at all learning levels, checks for student understanding). The amount of the annual bonus depends on three factors: (1) whether 60% or more of the students in a teacher's school receive free or reduced-price lunch, (2) whether a teacher's IMPACT evaluation takes into account individual-level value-added student achievement data, and (3) whether a teacher teaches a "high-need" subject. The annual bonus, which ranges from \$5,000 to \$25,000, increases with each of the three conditions that are satisfied.

To qualify for the increase in base salary, a teacher must earn a highly effective rating two years in a row. If a teacher qualifies, the teacher (1) moves to the master's degree salary band (if the teacher is not already there) and (2) receives a service credit of either 3 years or 5 years (a teacher receives a 5 year credit if his or her school has a free or reduced-price lunch rate of 60% or higher). Thus, for example, a qualifying teacher with 7 years of accumulated service is paid as if he or she has accumulated 10 or 12 years of service.

It is important to note two additional features of the IMPACT*plus* plan and, more generally, of the DCPS teacher evaluation system. First, a highly effective teacher who accepts a

<[http://dcps.dc.gov/DCPS/In+the+Classroom/Ensuring+Teacher+Success/IMPACT+\(Performance+Assessment\)/IMPACT+Guidebooks](http://dcps.dc.gov/DCPS/In+the+Classroom/Ensuring+Teacher+Success/IMPACT+(Performance+Assessment)/IMPACT+Guidebooks)>. The first two guidebooks are relevant to this study. They apply, respectively, to general education teachers with and without individual-level value-added student achievement data. For some teachers, individual-level value-added student achievement data are not available. These are "Group 2" teachers. Teachers for whom data are available are "Group 1" teachers. Group 1 teachers stand to earn larger rewards.

⁶⁰ Note that the IMPACT evaluation system is not the same thing as the IMPACT*plus* pay-for-performance system. The IMPACT*plus* system merely uses the IMPACT evaluation to measure teacher performance. All teachers receive an IMPACT evaluation, but not all teachers participate in the IMPACT*plus* system.

performance reward (as mentioned above, the plan is voluntary; a highly effective teacher need not accept a reward) forfeits recourse to certain clauses in the DCPS teacher contract. If such a teacher is "excessed"⁶¹ and cannot find a placement at another school, the teacher cannot exercise the contract's extra year, buyout, or early retirement options.⁶² Thus, the teacher assumes some risk by accepting a performance reward. Second, the pay of a teacher who does not qualify for a performance reward under *IMPACTplus* (because he or she has not been rated highly effective) or does qualify, but refuses a reward, is still partly determined by the teacher's IMPACT evaluation. The DC teacher contract stipulates that teachers who are rated minimally effective will remain at their current salary step, and that teachers who are rated effective or highly effective will move to the next step on the salary schedule. The contract says nothing about teachers who are rated ineffective.⁶³

Rhee communicated the threat of dismissal to Washington, DC public school teachers in three ways. First, she positioned herself in public statements as the enemy of "bad" teachers. In an interview with *The Washington Examiner* soon after assuming the DCPS chancellorship, Rhee asserted, for instance, "The bottom line is that I'm not going to have tolerance for ineffective teachers."⁶⁴ She expressed similar sentiments in interviews with *Newsweek*⁶⁵ and

⁶¹ Article 4.5.1.1 of the DCPS teachers contract: "An excess is an elimination of a teacher's position at a particular school due to a decline in student enrollment, a reduction in the local school budget, a closing or consolidation, a restructuring, or a change in the local school program, when such an elimination is not a 'reduction in force' (RIF) or 'abolishment.'"

⁶² These clauses stipulate that an excessed teacher who has been rated as "effective" or higher can opt for (1) a \$25,000 buyout and separation from the DCPS, (2) one year to look for another placement in the DCPS, or (3) early retirement (provided the teacher has accumulated 20 or more years of creditable service).

⁶³ The IMPACT evaluation guidebooks specify that ineffective and minimally effective teachers will be subject to separation from the school system, but the DCPS teacher contract says nothing about this.

⁶⁴ *The Washington Examiner*. 7/24/07. "Rhee Promises Crackdown on Bad Teachers." accessed at <<http://washingtonexaminer.com/local/rhee-promises-crack-down-bad-teachers>>

⁶⁵ Thomas, E. 8/23/08. "An Unlikely Gambler." *Newsweek*. Accessed at <<http://www.newsweek.com/2008/08/22/an-unlikely-gambler.html>>

*TIME*⁶⁶ in late 2008, and appeared on the latter magazine's cover standing in the center of an elementary school classroom, wielding a broom. The text accompanying her cover photo emphasized Rhee's "battle against bad teachers." Via these types of public appearances and statements, Washington, DC's public school teachers were put on notice that Rhee wanted to make dismissal a likely consequence of poor performance.

Second, the new teacher contract that was approved in June 2010 makes it easier for the DCPS to dismiss poorly performing teachers. The contract established a teacher excess policy (see footnote 11 for a definition of excess) that is performance-based. Under the new policy, teacher performance (as measured by the IMPACT evaluation system), and not seniority, factors most heavily into the excessing decision.⁶⁷ Moreover, under the new contract, teachers whose positions are eliminated are no longer guaranteed a new placement in the DCPS. Previously, such teachers could be foisted upon schools that didn't want them.

Third, Rhee either dismissed or excessed a considerable number of teachers (and other personnel), both before and after the new teacher contract was approved. In June 2009, for instance, Rhee fired about 250 teachers, 80 of whom were tenured. Soon after, in October 2009, she excessed over 200 more teachers. Though the ostensible justification for these excesses was fiscal hardship, the Washington Teacher's Union questioned whether they were necessary. The union's skepticism suggests that whether or not the October 2009 excesses were in fact fiscally defensible, Rhee's dismissal threats were seen as credible. In the union's view, Rhee wanted to get rid of allegedly bad teachers and would do so by any means.

⁶⁶ Ripley, A. 11/26/08. "Rhee Tackles Classroom Challenge." *TIME*. Accessed at <http://www.time.com/time/magazine/article/0,9171,1862444-1,00.html>

⁶⁷ By contrast, commonly used "last in, first out" policies stipulate that seniority be the deciding factor.

Most recently, in July 2010, Rhee fired 241 teachers (126 of these teachers were fired for poor IMPACT ratings; the remaining teachers were fired for licensure issues). At the same time, she announced that 737 additional teachers would be in danger of losing their jobs during the next school year due to poor performance,⁶⁸ warning that "a not insignificant number of folks will be moved out of the system for poor performance."⁶⁹ Given Rhee's public statements and the numerous actual dismissals that occurred during her chancellorship, it is reasonable to assume that she established a credible threat of dismissal.

Underlying Theory

The basic theoretical premise of pay-for-performance is that individuals will work to secure some outcome if they value it and believe that their effort will make its realization more likely.⁷⁰ It follows from this premise that a principal can use rewards (e.g., extra pay) to incentivize an agent to work in furtherance of the principal's goals (Perry et al., 2009). Though this theoretical logic is simple, the success of public sector pay-for-performance systems depends, in practice, on a number of factors.⁷¹ In their review of empirical research on these systems, Perry et al. (2009) emphasize that success is contingent on, among other things, (1) an

⁶⁸ These teachers had received IMPACT ratings of "minimally effective" for 2009-2010 school year. Recall that if a teacher receives a rating of minimally effective for two straight years, the teacher is subject to dismissal.

⁶⁹ Turque, B. 7/24/2010. "Rhee dismisses 241 teachers; union vows to contest firings." *Washington Post*. Accessed at <<http://www.washingtonpost.com/wp-dyn/content/article/2010/07/23/AR2010072303093.html?sid=ST2010072303662>>

⁷⁰ If p is the probability that high effort (working) will lead to the desired outcome and q is the probability that low effort (shirking) will lead to the desired outcome, an agent's efficacy—his ability to affect the outcome—is $p - q$. Other things being equal (e.g., effort costs, promised rewards), the agent is more likely work when $p - q$ is large (Miller and Whitford, 2007).

⁷¹ The question of whether pay-for-performance programs are successful is different than the question of whether pay-for-performance programs motivate employees (and, conversely, whether pay-for-performance programs have negative effects on employee motivation). I am interested in the latter question. Pay-for-performance programs can work in the sense that they are positively associated with student outcomes, but those outcomes might be the result of gaming, rather than increased teacher effort (Severson, 2011). There is a growing evaluation literature whose aim is to discover whether teacher pay-for-performance programs "work" (see, e.g., Glazerman and Saifullah, 2010; Springer et al., 2010; Glazerman and Saifullah, 2012; Fryer et al., 2012). The findings in this literature are mixed.

agent's belief that effort will in fact be rewarded, (2) clear goals, (3) whether potential rewards are large enough, (4) whether an agent is motivated by monetary rewards, (5) the perceived fairness of the system, and (6) competent management of the system.

Similarly, Bohnet and Eaton (2003) emphasize the contingent nature of public sector performance-pay programs, arguing that these programs are effective only if (1) employees have to complete one well-defined task, (2) performance is clearly measurable, (3) performance can be attributed to one person's effort (i.e., there are no coproduction problems), and (4) employees are primarily motivated by extrinsic rewards. Failing to implement pay-for-performance in a way that satisfies all of these contingencies undermines its motivational power. Accordingly, the goal of this chapter's empirical analysis is to determine whether Washington, DC public school teachers believed that pay-for-performance, as implemented in DC, met these conditions. My working hypothesis is that the *IMPACTplus* and IMPACT evaluation systems may affect DC teachers' turnover intentions and turnover decisions positively or negatively, depending on how teachers perceive these systems.

In discussing how organizations induce individuals to work toward the achievement of an organizational goal, Barnard (1938) emphasizes one particular "method of persuasion" that is relevant to this chapter's analysis—forced exclusion (141). He notes that organizations sometimes use forced exclusion of particular members to credibly threaten remaining members; that is, organizations use forced exclusion "to create fear among those not directly affected, so that they will be disposed to render to an organization certain contributions" (149). Similarly, Kraft (1991) notes that "the possibility and actual occurrence of dismissals serve as an incentive for the remaining workforce to meet the required performance standards" (451).⁷² Importantly,

⁷² Importantly, for the threat of dismissal to be credible, the equilibrium unemployment rate must be high enough that it is in the interest of individual employees to work rather than shirk (and risk being dismissed). If the

as Kraft (1991) explains, dismissals are likely to have a nonlinear effect on worker productivity. At some point, productivity will suffer because remaining workers will seek safer employment, and the best of these remaining workers will most easily be able to locate it. Moreover, frequent dismissals hurt employee morale and result in losses of firm-specific human capital. Kraft's (1991) empirical results support this reasoning.

Research on public sector employees' work preferences also suggests that aggressive dismissal threats might have negative motivational consequences for public sector workers. Houston (2000), Jurkiewicz et al. (1998), and Baldwin (1987), for instance, find that public sector employees value job security more than their private sector counterparts (but see Crewson, 1997). Relatedly, Buelens and Van den Broeck (2007) showed that public sector workers value a supportive work environment—an environment that is “friendly, harmonious,” and produces “feelings of safety in one’s role”—more than private sector workers (citing Kihlgren et al., 2003). If public sector workers value job security and a supportive work environment, it is reasonable to assume that they will react negatively if either of those things is put in jeopardy by aggressive dismissal threats.

Theory and empirical research suggest, therefore, that in the case of Washington, DC's public school system, the dismissal incentives established by Michelle Rhee will have increased the likelihood of turnover intention (and actual turnover) among Washington, DC public school teachers. In other words, the expectation is that dismissal threats grew to be so widespread during Rhee's tenure that they eventually became counterproductive. At some point, they ceased

unemployment rate was not sufficiently high, dismissed workers could too easily secure new jobs for the threat of dismissal to be a useful incentive device (Shapiro and Stiglitz, 1984). More generally, for the threat of dismissal to be credible, dismissal must be sufficiently costly to the employee. Dismissal costs can be monetary (e.g., the loss of a high wage) or non-monetary (e.g., the risk of unknown new working conditions, the loss of coworker friendships).

to motivate teachers to exert effort (i.e., to comply with Rhee's directives) and began to motivate them to want to leave their jobs.

Data and Method

The data for this chapter come from interviews with twelve current and former public school teachers working in the Washington, DC school system (DCPS) and neighboring systems. Eight of the interviewees are current or former DCPS teachers, one is a former Washington, DC public charter school teacher (DCPC), and three are currently teaching in nearby Virginia public school systems (two in the Fairfax County public schools, one in the Loudoun County public schools). I solicited interviews with teachers from nearby public school systems to build a minimal level of cross-organization treatment variation into my analysis. All teachers in the DCPS system were exposed to the same DCPS pay-for-performance system and the same dismissal threats, which means that the motivational strategies that I am interested in do not vary across subjects (though in some cases, they do vary within subjects, across time). Gathering interview data from teachers outside the DCPS system allowed me to form tentative conclusions about whether non-DCPS teachers might view DCPS incentives differently than DCPS teachers. Additionally, gathering data from non-DCPS teachers allowed me to form tentative conclusions about whether DCPS incentives might encourage non-DCPS teachers to select into the DCPS system. A snowball sampling procedure was used to obtain the interviews, and so the sample of interviewees is nonrandom. Consequently, any conclusions drawn from this study are not generalizable to the population of DCPS teachers, but are rather designed to shed light into the causal mechanisms that underlie the broader relationships uncovered in the two large-N studies that appear in chapters 2 and 3.

Though the sample used in this chapter's analysis is nonrandom, it does reflect the diversity of DCPS teachers on a variety of demographic dimensions (e.g., age, experience, school type). Table 4.1, which displays an array of interviewee characteristics, reveals that of the eight DCPS teachers, six are female and two are male. Out of all 12 teachers, eight are female and four are male. Three out of the eight DCPS teachers are African-American; the remaining five are white. In addition to there being a reasonable level of variation in gender and race, Table 4.1 also shows reasonable variation in grade levels taught, subjects taught, and age.

Table 4.1. Teacher interviewee characteristics

	System	Years in DCPS	Years in non-DCPS	Grade Level	Field	Age	Gender	Race
1	DCPS	≈ 1985 - 2011	.	6 - 12	Art	55 - 65	F	W
2	DCPS	≈ 2000 - present	.	4 - 6	Math	35 - 40	M	AA
3	DCPS	2006 - present	.	9 - 12	Math	35 - 40	F	AA
4	DCPS	2010 - present	.	Pre-K and K	General	22 - 26	F	W
5	DCPS	≈ 1980 - present	.	Pre-K and K	General and Special Ed.	55 - 65	F	AA
6	DCPS, DCPC	2005 - 2007, 2009-2011	2007 - 2009, 2011 - present	9 - 12	Natural sciences and Physics	30 - 35	M	W
7	DCPS, DCPC	2004 - 2007	2007 - 2008	3 - 5	English and Special Ed.	22 - 26	F	W
8	DCPS, DCPC	2008 - 2010	2010 - 2012	9 - 12	English	22 - 26	F	W
9	DCPC, Private	.	2003 - present	6 - 12	Math	30 - 35	M	W
10	Fairfax (VA) PS	.	≈ 1980 - 2011	Pre-K and K	Special Ed.	55 - 65	F	W
11	Loudoun (VA) PS	.	2004 - present	9 - 12	Phys. Ed. and Health	30 - 35	M	W
12	Fairfax (VA) PS	.	2005 - present	Pre-K and K	Special Ed.	25 - 35	F	W

Notes: DCPS = Washington, DC public schools; DCPC = Washington, DC public charter school.

It is important to note the timeframe of the two motivational strategies that I am interested in. Michelle Rhee took up her position in June 2007 and began publicly and aggressively establishing a dismissal threat as early as July 2007 (see footnote 13). This threat ended when Rhee left her position in October 2010. Thus, any teacher working in DCPS between 2007 and 2010 directly experienced this threat.⁷³ Teachers working in DCPC schools and nearby school systems were likely indirectly exposed to this threat—in other words, they were probably familiar with Rhee’s public declarations about poorly performing teachers, but were not direct targets of those declarations. The *IMPACTplus* and *IMPACT* systems formally took effect in September 2010, and so any teacher working in DCPS between 2010 and the present has direct experience with these programs. As with dismissal threats, teachers working in neighboring systems have likely been indirectly exposed to these systems. In other words, they are likely aware of these systems.⁷⁴

The interviews were semi-structured and rooted in a series of questions about the teacher’s experience with pay-for-performance, all of which appear in exhibit 4.1.⁷⁵ The style of questions reflected the semi-structured approach espoused by Luton (2010), but the topic lent itself occasionally to responses that were more narrative-based (see, e.g., Maynard-Moody and Musheno, 2003). The formal part of the interview would begin with an open-ended question of the following sort: How do you feel about *IMPACT*? How do you feel about the DCPS

⁷³ The degree to which DCPS teachers experienced (or were “exposed to”) this threat likely varied across teachers. For instance, some may have read the news articles in which Rhee promised to dismiss poorly performing teachers; other may not have.

⁷⁴ In so far as the goal of pay-for-performance programs is to encourage qualified individuals to select into organizations, these programs rely on indirect exposure.

⁷⁵ This type of interview approach is advocated by Luton (2010) and is similar to approaches taken in such studies as Lens (2007) and Goldstein (2004).

performance-pay system? What do you think about performance-pay as implemented in DC? I then would follow the interviewee's lead, probing for more information as relevant issues arose over the course of the conversation. The interviews lasted as long as it took the interviewee to address the major themes covered in exhibit 4.1, typically between 1.5 and 2.5 hours.

Results

Since I hypothesized that the success of pay-for-performance programs as motivational tools is contingent on the presence of a variety of factors (e.g., good management, the expectation that pay bonuses will be forthcoming), I will examine below whether these factors were present in the DCPS case. I also hypothesized that the dismissal threat established by Michelle Rhee during her tenure as DCPS Chancellor would be positively associated with DCPS teachers' turnover intentions and actual turnover decisions. Below, I will explore whether this was in fact the case.

An advantage of the loosely structured interview approach used in this study is that it allows for the emergence of new ideas that previous research (particularly, previous large-N research) has either neglected or been unable to address. One new idea—or, one new tentative conclusion—that emerges from this study is that public school teachers view pay-for-performance programs and dismissal threats, at least in theory, as good things. They tend to agree that teachers, and workers in general, should be held accountable for their performance on the job. At the same time, though, they seem to view these things negatively in practice. While previous research has examined teachers' attitudes about performance-pay—and has tended to find that these attitudes are negative (see, e.g., Lundstrom, 2012; Farrell and Morris, 2004; Hatry and Greiner, 1985; Middleton, 1989; Elam, 1989; but see Ballou and Podgursky, 1993)—this research has not simultaneously examined teachers' attitudes about the theoretical premises of

performance-pay and dismissal threats and teachers' attitudes about the details of their implementation. Accordingly, I close the results section by juxtaposing statements that express teachers' theory-level feelings about pay-for-performance and dismissal threats with statements that express their implementation-level feelings.

IMPACT_{plus} and the Contingent Nature of Pay-for-Performance

Recall some of the key factors necessary for public sector pay-for-performance programs to be successful: belief that effort will be rewarded, clear goals, having to perform one well-defined task, sufficiently large rewards, extrinsically motivated workers, perceived fairness, competent management, performance that is clearly measurable, and performance that can be attributed to one person's effort (Bohnet and Eaton, 2003; Perry et al., 2009). My interviews with DCPS (and DCPC) teachers revealed major deficiencies in four of these areas: extrinsic motivation, perceived fairness, competent management, and clearly measurable performance. Below, I cover each, in turn.

Extrinsic Motivation

Nearly all DCPS interviewees (7/8) agreed that paying teachers more for doing a better job was, in theory, a good idea. Teacher 7, for example, remarked, "In any other job, you get paid more for doing well. Why shouldn't it be the same in teaching?" At the same time, however, *all* interviewees noted that they were not in the teaching profession to make money. For instance, teacher 5 stated, "I don't do it for the money. I do it for the kids. I love teaching. I love the rewards of a student you had in the past coming back and talking about how you made a difference." Similarly, teacher 4 noted, "I don't need a bonus to want to do my job well." As a final example, teacher 9 shared the following: "I moved from a private school to a public charter

school in DC because I was 27 and wanted to be challenged, which I didn't think was happening in my private school. It didn't have anything to do with money."

While nearly all interviewees agreed that the bonuses offered by the *IMPACTplus* were substantial,⁷⁶ a number of teachers also talked about being uncomfortable with the size of these bonuses (recall that the largest potential bonus is \$25,000). Teacher 2, for instance, suggested he would be "ok with" a bonus of \$1,000, noting that "\$25,000 just seems too large." Others suggested that non-monetary rewards would be preferable to monetary awards. Teacher 4 pointed out that the IMPACT system is at least attempting to recognize good teachers, remarking that "recognition is enough on its own." Teacher 4 added, "They wouldn't have to pay me a lot, but maybe have some event where they hand out awards." Teacher 7, who was rated highly effective during the 2010-2011 school year, professed reluctance to accept her IMPACT bonus (\$15,000). Her acceptance, she believed, would generate an unfavorable reaction among her coworkers:

I was highly effective last year, but I didn't want it. I didn't want teachers talking behind my back; I didn't want that jealousy. I finally did take it—they kept calling me—but they took so much out in terms of taxes that it wasn't even that much.

Instead of monetary awards, teacher 7 thought that DCPS should send highly effective teachers on vacation or perhaps even give them a break from the IMPACT system.

Perceived Fairness and Competent Management

I treat these two factors together because in the course of my interviews, it became clear that there was significant overlap in perceptions of fairness and perceptions concerning whether the IMPACT system was competently managed. If an interviewee thought the system was

⁷⁶ Two interviewees (teachers 7 and 8), both of whom are former teachers, said something of the form, "You couldn't pay me enough to keep doing this job." Nevertheless, they did acknowledge that the bonuses offered by the IMPACT system were large.

unfair, the same interviewee usually thought the system was not competently managed.

Interviewees tended to view fairness and competence as synonymous. By far the most common complaint concerning fairness and competence was that the in-class observations conducted by a teacher's principal were not impartial (recall that a teacher's IMPACT rating is based partially on three formal observations by the teacher's principal or by an assistant principal). Many interviewees suggested that principals "play favorites" and "mark you down if they don't like you." Teacher 5 stated, for instance, "The principals have their buddies; they have teachers they're close with. Everyone knows that. That doesn't hurt those teachers' ratings." Similarly, teacher 4—whose grade levels are pre-kindergarten and kindergarten—argued that principals' ratings are inherently subjective: "If the principal doesn't like you, she can underrate you. Or, the principal can come at a time of day that she knows is difficult, like after nap time or late in the day when the kids are tired."

Another common, and related, complaint was that principals from different subject matter backgrounds as the teachers they rate lack standing as evaluators. Teacher 6, who teaches classes in the natural sciences (e.g., chemistry and biology) as well as physics, noted, "A principal who used to teach English has no idea how to run a physics class, so how can she rate me?" Teacher 1, who taught art while working for DCPS, expressed a similar attitude, noting that "Art isn't as structured as other classes. People, including principals, don't get that." The IMPACT system attempts to balance these concerns by having third-party observers (master educators) observe teachers twice and generate their own ratings, which are averaged with the principals' ratings. Presumably, since master educators (who are themselves DCPS teachers) are from different schools than the teachers they are rating, they can be counted on to be impartial.

Furthermore, every effort is made to ensure that master educators are from the same field as the teachers they rate.

Fewer teachers took issue with the legitimacy of the master educators, though some did bristle at the idea of “outsiders” sitting in on their classes. Teacher 5, who has been in the DCPS system for just over 30 years, pointed out, “Master teachers may not agree with how you teach; they come from outside; they’re often young; they just want to pad their resume.” Teacher 6 voiced a different type of concern when he noted that master educators, while perhaps impartial, are unfamiliar with the specific challenges faced by the teachers they rate: “Master teachers come in and don’t know that one of your students has an attention disorder, and that just to keep the kid under control is an achievement. Your principal tends to know stuff like that.” In this view, the school-specific knowledge possessed by the principal balances the master educator’s lack of contextual knowledge.

Clearly Measurable Performance

All DCPS interviewees (8/8) indicated that it is difficult to measure teacher performance, and that the IMPACT system’s approach to doing so is flawed. Teacher 6 argued that certain parts of teaching are intangible, and therefore not amenable to measurement: “Teaching is partly emotional, and you can’t measure that.” Teacher 1 spoke at length about the fine points of running a classroom efficiently and keeping all students engaged, and suggested that IMPACT ratings don’t incorporate these things: “The master educator assessments don’t pick up on the subtleties of teaching, the transitions. If a student isn’t getting something, you have to change course. Or if one student is being disruptive, how do you change things up.” Teacher 1 went on to add, “I feel like I know a good teacher when I see one, but the IMPACT rubric doesn’t pick it up.” As mentioned above, these kinds of statements, which express disagreement with the way

performance-pay was implemented in DCPS, often run counter to more favorable feelings concerning the idea of performance-pay. Teacher 1, no fan of the way IMPACT measures teacher performance, nevertheless remains supportive of the notion that teachers should be held accountable by these types of programs: “I liked what Rhee and Fenty were trying to do. It took guts to come in and try to do that. Bad teachers should be held accountable.”

Many of the interviewees also noted that the way the IMPACT system measures teacher effectiveness is unrealistic and unreasonable. Teacher 2, for one, emphasized that the rating rubric used by the system demands that teachers demonstrate competency in too many areas (nine) during a relatively short (30 minutes) observation period: “To go down that checklist in one half of an hour is impossible.” Other interviewees pointed out that the IMPACT system’s measurement approach was unreasonable because it didn’t fully take into account the challenges confronted by DCPS teachers, particularly teachers in disadvantaged schools. As teacher 8 stated,

So much goes on outside of the classroom that I have no control over... These kids have so much else to worry about besides school... traumas they’ve witnessed. One of my students had been shot. In their neighborhoods, it’s loud at night. How can they even fall asleep? So to ask them to come in and “do your best” is just absurd. School’s the last thing they’re worried about.

Though the IMPACT system does attempt to control for classroom-to-classroom differences in calculating teacher value-added scores, most interviewees were highly skeptical that what goes on outside the classroom is fully accounted for by the IMPACT rating system.

Punitive, not Constructive

Though not one of the contingencies initially identified as being important, many teachers pointed out that the IMPACT system came across as intended to punish poor performance rather than to help teachers improve their teaching. Teacher 5 stated, for instance,

that DCPS “should stop looking over teachers’ shoulders and start helping them become better teachers. Focus on strengths, identify weaknesses, and help teachers get better.” Likewise, teacher 1 expressed dissatisfaction with the apparently punitive nature of the IMPACT system:

I envisioned the system as a conversation between master educator and the teacher, and thought it would emphasize what teachers were doing well while also helping them to improve at what they’re doing poorly. But I think the observation process seemed adversarial to a lot of teachers. Teachers were on edge to begin with because of Rhee’s publicity about firing bad teachers. IMPACT made them even more on edge.

Finally, teacher 3 echoed teacher 5 concerns about the potential for performance-pay systems to come across as overbearing, or as “looking over teachers’ shoulders”: “IMPACT created micromanagement; it created a larger central bureaucracy; and it prevents us from focusing on our teaching.”

Effects on Turnover?

Of the eight DCPS teachers interviewed for this study, one left teaching entirely during the Rhee IMPACT era (teacher 1) and two moved from a DCPS school to a DCPC school (teachers 6 and 8). None of these teachers indicated that the IMPACT system had any effect on their turnover decisions. Teacher 1 retired; teacher 6 moved to a DCPC school because he thought doing so would give him more autonomy; and teacher 8 left primarily because she was dissatisfied with her school’s working conditions and its administration, which she called “dysfunctional and unsupportive.” Thus, while teachers did voice concerns about the IMPACT system, none identified these concerns as their reasons for leaving the DCPS system. Similarly, none of the eight DCPS teachers who remained in their positions during the Rhee era indicated that the IMPACT system spurred them to think about leaving their jobs.

In addition to the goal of rewarding and retaining good teachers, another purpose of the IMPACT system is to encourage qualified teachers to select into the DCPS system. The four

non-DCPS teachers interviewed for this study shed some light on the question of whether the IMPACT system accomplishes this purpose. While these four teachers, like the eight DCPS interviewees, viewed the idea of performance-pay favorably, none of them was familiar with the details of the IMPACT system.

The Threat of Dismissal

A majority (6/8) of DCPS interviewees indicated that they believed Michelle Rhee successfully served notice to the system's teachers that poor performance would not be tolerated. As noted above, teacher 1 stated that DCPS teachers "were on edge" in the wake of Rhee's public declarations concerning poorly performing teachers. Teacher 5 agreed, saying, "People knew their jobs were on the line. For the first time in a while, people were scared. I remember an older teacher I know telling me that she thought they'd fire her just for walking so slowly." Similarly, teacher 6 noted, "I do think teachers were alert to the fact that there could be real consequences if they didn't do well. At the very least, they knew that they couldn't be awful." Though most DCPS interviewees did agree that teachers were successfully put on notice by Michelle Rhee's efforts to establish a credible dismissal threat in the DCPS system, none of these teachers indicated that the existence of this threat caused them to think about leaving their job. Nor did any of the teachers who actually left DCPS say that this threat caused them to do so.

While teachers tended to view being "on edge" unfavorably in practice, most acknowledged that the push for accountability underlying Rhee's dismissal threats was a positive development. Teacher 6, for one, noted, "Teachers earn taxpayer dollars, so the public has the right to make demands of them." Sharing this sentiment, teacher 4 forcefully declared, "Teachers are earning taxpayer money...they should be accountable. Bad teachers *should* be identified and weeded out. Elementary school teachers shouldn't have tenure...if you're doing a

poor job, you should be fired.” And teacher 7 remarked, “Teaching is a weird profession. It’s a different world. In any other business you fire someone who’s not doing their job.”

Theory-Level vs. Implementation-Level Attitudes

By theory-level attitudes, I mean teachers’ feelings about the normative premises underlying pay-for-performance programs and dismissal threats—namely, that they should be used to hold workers accountable for their performance. By implementation-level attitudes, I mean teachers’ feelings regarding their actual experience of these incentive strategies, as implemented. Below, I juxtapose interview statements to illustrate how teachers’ theory-level views often diverge from their implementation-level views. Teacher 5 is not listed because she did not make any statements that clearly reflect positive theory-level attitudes.

Teacher 1

Theory-level views: “I was on Rhee’s side and appreciated what she was doing. I thought DCPS needed drastic change and I liked that Fenty and Rhee were doing that...Teaching is hard, so good teachers should get rewarded.”

Implementation-level views: “A lot of stuff goes on outside the classroom that teachers don’t have control over. Teachers can’t control that stuff—whether the parents are making sure the kids are doing their homework and other things. IMPACT doesn’t factor that stuff in.”

Teacher 2

Theory-level views: “Teachers shouldn’t be able to coast by. If IMPACT prevents them from doing that, then it’s a good thing.”

Implementation-level views: “You can’t expect teachers to be ‘on’ anytime a master educator or principal happens to pop into their classroom. Teachers have bad days sometimes. IMPACT doesn’t recognize that.”

Teacher 3

Theory-level views: “I don’t have a problem with trying to get teachers to do a better job of educating their students. Obviously, that’s what we’re here for.”

Implementation-level views: “I’m not sure what the IMPACT system’s goal is. If it’s to educate students, there’s a better way to do things.”

Teacher 4

Theory-level views: “I don’t tell the people I work with that I like IMPACT. They’ll think I’m anti-teacher, when really I’m anti-bad teacher.”

Implementation-level views: “They had to furlough us for four days last year and we didn’t get paid on those four days. If they had to do that, where are they going to get the money for bonuses?”

Teacher 6

Theory-level views: “I don’t understand how the WTU (Washington Teachers’ Union) can stick up for incompetent teachers based on procedural technicalities. Incompetent teachers should be fired.”

Implementation-level views: “One problem with IMPACT is that the tests the students take have no consequences for students, so students don’t take them seriously. Students—especially high school students—know this. They can purposely do poorly to annoy administrators, or to get at their own teachers.”

Teacher 7

Theory-level views: “If you do a good job, you should be rewarded for that. And if you don’t do a good job, there should be consequences.”

Implementation-level views: “If the principal is walking down the hall with a notebook in her hand, we warn each other. Principals can just drop in whenever they want, so we try to give each other a heads-up. Ideally, you’d like to get observed on a good day, but you never know.”

Teacher 8

Theory-level views: “There are a lot of incompetent teachers in DCPS. My first principal was incompetent, but she was able to slide along. She finally got fired, and DCPS is better because she’s gone. Rhee made that possible.”

Implementation-level views: “When I taught special ed., it was a challenge for me to just keep my class under control. How could I realistically demonstrate that I was a good teacher?”

Conclusion

Pay-for-performance programs are premised on an appealingly simple idea, but they have proven difficult to implement, particularly in the public sector. In order for them to be successful, a variety of contingencies must be satisfied. Among other things, workers must care about the monetary rewards that these programs offer; workers must perceive that the programs are fair and competently managed; and worker performance must be measurable. Theory suggests that if these and other contingencies are unmet, pay-for-performance programs can have negative consequences for employee motivation. Like pay-for-performance programs, dismissal threats are based on a simple idea—namely, that if workers believe that they could lose their jobs for performing poorly, they will be less likely to do so. Also like pay-for-performance programs, dismissal threats can have negative consequences for employee motivation. If they are too aggressively wielded, they can be counterproductive, since employees (including good employees) may seek safer jobs.

This chapter's analysis, based on interviews with twelve current and former public school teachers in the Washington, DC public school system and neighboring school systems, suggests that teachers view these incentive strategies—in practice, at least—unfavorably. However, teachers' unfavorable "implementation-level" views concerning these strategies do not appear to be associated with their turnover intentions or actual turnover decisions. In contrast to their implementation-level views, teachers' "theory-level" views of pay-for-performance tend to be favorable. Teachers—at least the teachers interviewed for this study—agree with the idea that public school teachers should be held accountable for their job performance.

The disjunction between teachers' theory-level and implementation-level views of pay-for-performance programs has interesting implications for teachers' decisions to select into school systems that use these programs. In addition to rewarding and retaining existing high-quality teachers, another goal of pay-for-performance programs is to attract prospective high-quality teachers into organizations using these programs. If these programs work on this score—that is, if they do attract high-quality teachers—these teachers may find themselves, perhaps to their unhappy surprise, laboring under an odious performance-pay program. Though not covered in detail in this study's results section, it is interesting to note here that when asked how they would improve the IMPACT system, no teacher came up with a compelling answer. Many suggestions were vague (e.g., "I'd try to come up with a better way to measure teacher performance"); others seemed to be wishful thinking (e.g., "Highly effective teachers should be sent on a vacation"). That teachers cannot provide useful suggestions for the design of pay-for-performance programs further suggests that employee decisions concerning whether to select into organizations using these programs may be naïve.

CHAPTER 5

PUBLIC SECTOR EMPLOYEE TURNOVER: PRESCRIPTIONS AND PROSPECTS

As already noted, public sector employee turnover entails considerable costs, both monetary and nonmonetary. When employees leave an organization, that organization has to spend time, money, and effort searching for a replacement. Moreover, turnover has adverse effects on employee morale and, ultimately, on organizational performance (Griffeth, 1986). These general concerns motivate this dissertation, in which I used data on public school teachers and principals to do three things: 1. Explain why and illustrate how the use of turnover intention as a proxy for actual turnover in large-N research can produce misleading public management prescriptions. 2. Examine whether constraints on public managers' abilities to reward, discipline, and hire personnel are positively associated with public managers' negative work attitudes, turnover intentions, and actual turnover decisions. 3. Explore whether and why the use of two strategies for inducing workers' compliance with formal policy goals—pay-for-performance and dismissal threats—might be associated with workers' turnover intentions and actual turnover decisions. Below, I summarize the contribution of each of these chapters to the public sector turnover literature.

Turnover vs. Turnover Intention

Scholars representing a diverse array of academic disciplines (e.g., psychology, organizational behavior, business management, sociology, economics) have, since the middle part of the 20th century, published thousands of studies on employee turnover (see, e.g., Cotton et al., 1986 and Cohen, 1993 for reviews). More recently, public administration and public management scholars have also taken up the issue of employee turnover (see, e.g., Curry et al., 2005; Grissom and Keiser, 2011; Grissom et al., 2012; Ingraham et al., 2000; Kellough and

Osuna, 1995; Lee and Whitford, 2008; Lewis, 1991; Lewis and Park, 1989; Moynihan and Landuyt, 2008; Moynihan and Pandey, 2008; Pitts et al., 2011; Selden, 2009; Selden and Moynihan 2000). While scholars from some disciplines—psychology and organizational behavior in particular—have been concerned with specifying highly detailed theoretical models of the turnover process (see, e.g., Mobley, 1977), scholars of public management have tended to take a more practical, prescriptive approach to the problem of employee turnover.

The main goal of the prescriptive approach is to identify things that public sector workers value and to subsequently determine whether workers value those things so much that they are willing to leave their jobs to get them or to stay in their jobs to keep them. Selden (2009), for instance, tests whether the presence of family-friendly programs in public sector organizations is negatively associated with state-level workers' turnover intentions. Similarly, Pitts et al. (2011) test whether a variety of factors, including advancement opportunities, the existence of a "performance culture," and satisfaction with benefits are associated with federal employees' turnover intentions. Finally, Kim (2005) tests whether participatory management and other human resource practices are associated with state government IT employees' turnover intentions. The prescriptions that follow from this body of research are straightforward. If a factor is negatively associated with turnover intention and/or actual turnover and a public manager would like to retain her employees, the manager should provide her employees with more of that factor (e.g., more participatory management, more advancement opportunities). Conversely, if a factor is positively associated with turnover intention and/or actual turnover and

a public manager would like to retain his employees, the manager should remove, reduce, or remedy that factor (e.g., a poor physical work environment).⁷⁷

While simple in its purpose and straightforward in its recommendations, the prescriptive approach, if mishandled, can have serious negative consequences. Public managers must spend time, effort, and managerial capital to implement its recommendations. Time and effort spent establishing and subsequently overseeing family-friendly programs cannot also be spent establishing and coordinating employee participation programs.⁷⁸ Moreover, managers who devote considerable time and effort to the establishment and maintenance of family-friendly programs may alienate employees who place little value on those programs. In this dissertation's first chapter, I sought to show that the use of turnover intention as a proxy for actual turnover in large-N research can lead to faulty public management prescriptions and, therefore, to wasted managerial resources. Given that much of the existing research on public sector employee turnover relies on measures of turnover intention, this is an important contribution.

In addition to arguing that the use of turnover intention as a proxy for actual turnover can result in misleading public management prescriptions, I also sought to show that differentiating career turnover (i.e., leaving one's profession entirely) from organizational turnover (i.e., moving from one organization within a given profession to another organization within the same profession) can be beneficial for public managers. Since organizational turnover is a more tractable problem—that is, more factors appear to be associated with it than with career turnover,

⁷⁷ The prescriptive approach to the problem of public employee turnover might also be called the program evaluation approach, since it is concerned more with whether some treatment variable (X) affects turnover (Y) than with the development of theory.

⁷⁸ Thinking of the prescriptive approach as a program evaluation approach is useful here. One of the most famous questions addressed by the evaluation approach is whether public school resources positively affect student performance. The answer to this question has serious policy implications. If resources do in fact positively affect student performance, the resulting prescription—to increase school resources—is simple, though potentially very costly.

and these associations are larger in the organizational turnover case—it follows that public managers’ time and effort would be better spent addressing the problem of organizational turnover than addressing the problem of career turnover. Since the prescriptive approach to public sector employee turnover is primarily concerned with generating recommendations for practice, it would benefit from making these kinds of practical distinctions.

Managerial Constraints and Public Managers’ Turnover Decisions

A second goal of the prescriptive approach to public employee turnover has been to identify factors that are thought to be especially important in the context of the public sector and to determine whether they impact public sector employee’s turnover decisions. For instance, pay has always been a particular concern of the public sector, given that private sector firms can usually offer higher wages (Stazyk and Llorens, 2011). Managerial constraints—whether political, financial, legal, or otherwise—are a central concern of public administration and public management scholars (Rainey and Bozeman, 2000).⁷⁹ Indeed, two of public administration’s most high-profile movements—the New Public Management (NPM) and the National Performance Review (NPR)—were centered on the idea that if public managers were freed from these constraints, improvements in organizational performance would follow (Kettl, 1997). In particular, advocates of these movements argued that public managers should be able to reward, discipline, and hire personnel as they see fit. In this chapter, I sought to connect public administration’s longstanding concern with managerial constraints to the growing literature on public employee turnover. Moreover, by setting this chapter’s analysis in the context of public education, I contribute to the small literature on public school principal turnover.

⁷⁹ Though empirical evidence suggests a more tempered view, conventional wisdom holds that public managers are beset by these constraints (Rainey and Bozeman, 2000).

A simple theoretical logic underpinned this chapter's analysis: Public managers care about organizational performance because they are held accountable for it (Lipsky, 1980). Because constraints—more specifically, personnel constraints—make it difficult for public managers to influence organizational performance, they prefer to manage in settings that are unconstrained to settings that are constrained. Thus, constraints can be expected to compel public managers to seek work in unconstrained settings. For the most part, my findings run counter to this expectation. Personnel constraints do not appear to push public managers to leave their jobs, though they are associated with certain negative work attitudes (e.g., burnout).

These findings can be interpreted in a few ways. First, it may be the case that public managers do not care about organizational performance, and so do not feel compelled to seek out organizational settings in which their managerial discretion will be relatively unconstrained. Second, it may be the case that public managers are accustomed to managing in constrained settings—indeed, they may become adept at it over time—and so are inclined to remain in their jobs. Third, public managers may feel that working in constrained settings limits the degree to which they can reasonably be held accountable for organizational performance. Fourth, it may be the case that personnel constraints do not appreciably undermine public managers' ability to influence organizational performance. One of the chapter's more specific findings—that non-managerial influence in organizational policy is not associated with public managers' turnover intentions or actual turnover decisions—may indicate that managers are willing to share power with their subordinates. In any case, the majority of these interpretations undercut New Public Management and National Performance Review claims about the importance of managerial constraints.

Motivating Public Sector Workers

This chapter used data from interviews with 12 current and former public school teachers working in the Washington, DC public school system and neighboring school systems to explore, in depth, whether policymakers' attempts at inducing workers' compliance with formal policy goals can have adverse motivational consequences for workers. Motivating employees is a crucial problem for organizations, particularly in the public sector. Organizations want their employees to exert effort in pursuit of a goal (or goals), but employees cannot be counted on to comply (Brehm and Gates, 1997). One way to induce compliance is to incentivize employee effort by offering employees rewards for achieving a specified outcome. Pay-for-performance systems, which have, in recent years, been implemented with increasing frequency in the public sector, are based on this idea (Bowman, 2010). Another way to induce compliance is to threaten to dismiss employees if they do not provide adequate levels of effort. While both of these approaches appear to be straightforward, neither is without flaws. For performance-pay systems to be successful, they must satisfy a variety of conditions. Among these are that workers covered by these systems need to believe that they are fair; workers need to be motivated by extrinsic rewards; and worker performance needs to be measurable. For dismissal threats to be useful, they cannot become too severe or come to be seen as capricious.

Interviews conducted with Washington, DC public school teachers indicated that pay-for-performance, in the form of DC's IMPACT evaluation system, did suffer from serious flaws, but was not associated with DCPS teachers' turnover intentions or actual turnover decisions. Similarly, these interviews suggested that dismissal threats, while perceived as severe, were not associated with DCPS teachers' turnover intentions or actual turnover decisions. The chapter's main contribution is that it illustrates how teachers' "theory-level" attitudes about pay-for-performance and dismissal threats often diverge from their "street-level" attitudes. Interviewees

tended to support the notion that public school teachers should be held accountable for their performance while also finding significant fault with this idea, as implemented. Moreover, interviewees found it difficult to describe what a successful pay-for-performance program would look like. That teachers hold divergent “theory-level” and “street-level” attitudes concerning teacher incentive systems suggests that their decisions about whether to select into school systems using these systems may be based on incomplete information.

Future Directions

Since public management’s approach to the problem of employee turnover is avowedly prescriptive, it is important for public management researchers to make sure that the prescriptions they generate are valid. As I argued in chapter 2, generating valid prescriptions regarding public employee turnover involves, among other things, measuring turnover’s various sub-elements. More generally, generating valid turnover prescriptions requires strong, internally valid research designs. In this dissertation’s large-N analyses, I relied on a cross-sectional fixed effects approach to increase internal validity. Future research can improve on this approach by using panel data. Though public administration and public management lack homegrown panel data sets of the type found in political science (e.g., the American National Election Studies, the Correlates of War database), they are also unconstrained by discipline-specific conventions when it comes to data use (Gill and Meier, 2000). While the large-N, quantitative approach of this dissertation’s first two empirical chapters is useful for uncovering systematic relationships between factors of interest and employees’ turnover behaviors, the qualitative approach taken in the final empirical chapter also serves an important purpose. By shedding light on why a factor of interest may or may not be associated with turnover, this approach can help public management researchers fine-tune their prescriptions.

Though I've focused on its prescriptive aspects, research on employee turnover can also make important contributions to public administration and public management theory. O'Toole and Meier (1999), for instance, have devoted considerable time to developing a theory of why and how management matters in the public sector. Part of this effort has involved creating a typology of what effective public managers do to boost the performance of their organizations (Meier and O'Toole, 2009). By identifying factors that managers can manipulate to reduce turnover, which carries significant costs for organizations, turnover research can make a useful contribution to Meier and O'Toole's (2009) typology of effective public managers. More recently, Grissom and Keiser (2011) and Grissom et al. (2012) have used research on public employee turnover to make contributions to representative bureaucracy theory, which posits that minority bureaucrats advocate for the interests of minority clients. In finding that racial and gender congruence between subordinates and their supervisors are negatively associated with the probability of subordinate turnover, these scholars have argued that representative bureaucracy theory applies to supervisor-subordinate relationships, not just bureaucrat-client relationships. The study of public employee turnover, then, is important not only for the prescriptions it generates, but also for the contributions it can make to public administration and public management theory.

APPENDIX A

EXHIBIT 4.1: INTERVIEW INSTRUMENT

Predetermined questions:

- What brought you to teaching?
- What do you like best about your job?
- What do you like least about your job?
- What's your opinion about the *IMPACTplus* and *IMPACT* evaluation systems?
- In your opinion, what are the goals of the *IMPACTplus* and *IMPACT* evaluation systems?
- What do you think are some strengths of the *IMPACTplus* and *IMPACT* evaluation systems?
- What do you think are some weaknesses of the *IMPACTplus* and *IMPACT* evaluation systems?
- What motivates you to come to work?
- What motivates you to do the best possible job that you can?
- If you could make any improvements to the *IMPACTplus* and *IMPACT* evaluation systems, what would they be?
- How do performance pay incentives affect the way you do your job?
- How do the *IMPACTplus* and *IMPACT* evaluation systems affect your commitment to teaching in the Washington, DC, public school system?
- Performance pay is a hot topic in education. What's your perspective on the attention that teacher performance and teacher pay have been getting in the media?

Improvisational probes are intended to elicit richer, more nuanced information. These were difficult to specify in advance, but usually took the following form:

- Why do you say that?
- Could you tell me about a time when...?
- Is there a specific incident that illustrates your point?
- Could you walk me through that?

Questions regarding the threat of dismissal:

- How did you feel about the security of your job during Michelle Rhee's tenure?
- How do you feel about the security of your job now?
- How did the dismissals and teacher "excesses" that occurred during Michelle Rhee's tenure affect the way you did (and do) your job?
- How did the dismissals and teacher "excesses" that occurred during Michelle Rhee's tenure affect the way you feel about your job?
- How did the dismissals and teacher "excesses" that occurred during Michelle Rhee's tenure affect your commitment to teaching in Washington, DC?
- How did the dismissals and teacher "excesses" that occurred during Michelle Rhee's tenure affect your commitment to the teaching profession?
- How important is job security to you?
- How much job security should teachers be entitled to?

The improvisational probes used here were similar in form to those used to tap teachers' attitudes about the *IMPACTplus* and *IMPACT* evaluation systems.

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