Leadership and Policy in Schools
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/nlps20

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Available online: 21 Jul 2011

To cite this article: Abebayehu Aemero Tekleselassie & Pedro Villarreal III (2011): Career Mobility and Departure Intentions among School Principals in the United States: Incentives and Disincentives, Leadership and Policy in Schools, 10:3, 251-293

To link to this article: http://dx.doi.org/10.1080/15700763.2011.585536

Leadership and Policy in Schools, 10:251–293, 2011

ISSN: 1570-0763 print/1744-5043 online
DOI: 10.1080/15700763.2011.585536

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Career Mobility and Departure Intentions among School Principals in the United States: Incentives and Disincentives

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Despite concerns about turnover among administrators, conditions that influence career longevity intentions of school principals are less known. To address this gap in the literature, we conducted a three-level Generalized Multilevel Model to estimate variations in school and district characteristics impacting principals' career departure and mobility intentions, based on data from the School and Staffing Survey. Our findings indicate that job satisfaction, salary, autonomy, and individual characteristics impact intent to leave or move. Further, intentions to leave and move are not influenced by the same set of antecedents, suggesting that a different set of policy levers is needed to increase retention.

INTRODUCTION AND RESEARCH BACKGROUND

The need for qualified principals has never been as imperative as today given the current emphasis on accountability for school improvement. The No Child Left Behind (NCLB) legislation stresses the increasing visibility and importance of school administration in the larger education reform efforts (Gates, Ringel, Sanntibañez, Ross, & Chung, 2003). Strong and visionary principals build positive school climate, understand and interpret policies to facilitate their effective implementation, and mobilize teachers and school community members in order to realize school improvement targets

The authors gratefully acknowledge insightful comments and suggestions from Dr. Virginia Roach, Associate Professor of Educational Leadership at George Washington University, and the three anonymous reviewers.

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(Hallinger, 2005; Marzano et al., 2005; Owings, Kaplan, & Nunnery, 2005; Sergiovanni, 2005). In addition, principals are recognized by many as second only to classroom teaching among all school-related factors that contribute to student learning and student achievement (Andrews & Soder, 1987; Hallinger & Murphy, 1986; Interstate School Leaders Licensure Consortium [ISLLC], 1996; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Louis, Leithwood, Wahlstrom, & Anderson, 2010; Waters, Marzano, & McNulty, 2003; Zigarelli, 1996).

Just as school leadership has been recognized by many as a critical force for school improvement, national reports highlight concerns about a shortage of qualified candidates to fill school principal positions (Bowles, King, & Crow, 2000; Educational Research Service, 1998, 2000; Graham & Messner, 1998; Pounder & Merrill, 2001; Yerkes & Guaglianone, 1998). Explanations for such shortage are diverse and include the retirement of "baby-boomers" in large numbers (Doud & Keller, 1998; Newton, Giesen, Freeman, Bishop, & Zeitoun, 2003), the premature departure of incumbent principals from their positions (Yerkes & Guaglianone, 1998), and the lack of interest among certified candidates to apply for vacant administrative jobs (Winter, Rinehart, & Munoz, 2001). Since high turnover denies schools and school systems the leadership stability needed for successful implementation of educational programs, understanding what set of factors are associated with principals' departure and mobility intentions is imperative for identifying strategies to improve job longevity and retention among school principals.

Status of Principal Supply and Demand in the USA: Background to Prior Research

Policymakers at different levels are concerned about turnover among school principals. While some researchers (Pounder, Galvin, & Shepherd, 2003; Gates et al., 2003) suggest that nationally the supply and demand for principals is in balance, reports across the country indicate the contrary (Howley, Andrianaivo, & Perry, 2005; US Department of Labor, 2000). For example, reports from various states, including Georgia, Texas, New York, California, Illinois, and North Carolina pointed to the fact that filling vacant administrative positions was extremely difficult for districts due to high turnover among principals (Arthur, Mallory, & Tekleselassie, 2009; Papa, 2007; Tillman, 2003; White, Fong, & Makkonen, 2010). Galvin's study (2000) suggested that only 15 percent of principals held their positions for ten or more years, while 31 percent of them left the principalship during their first year of assignment. Papa, Lankford, and Wyckoff's (2002) study in New York confirmed that 66 percent of principals leave their schools within the first six years of appointment. Distressed by such trends of principal attrition, some states have had to introduce new incentive structures and programs to increase the supply of new principals (Paul, 2003).

Interestingly, the shortage of principals is occurring in spite of an excess pool of candidates with leadership credentials, but with little interest in becoming principals. A 2001 report of the Association of California School Administrators identified 34,000 individuals who held administrative certification—more than enough to fill the state's 23,000 school administrative positions. Yet, as the same study indicates, 90 percent of districts reported shortages of high school principal candidates, and 73 percent reported shortages of elementary principal candidates (Bell, 2001)—a finding comparable to the national trend; over 60 percent of the states report a decline in the principal pool (Thomas Fordham Institute, 2003).

Explanations for Career Departure of School Principals

Except for a few studies (Gates et al., 2006; Cooley & Shen, 1999; Papa, 2007), research about different career-related decisions that school principals pursue while in office is scarce. Findings from these limited studies help identify four major reasons for departure and mobility: individual background, school characteristics, workplace conditions, and emotional aspects of work.

Individual Level Factors

In accordance with the general assertion that individual's work lives are interactively associated with their personal lives (e.g., Blasé & Pajak, 1986; Fraser, 1983), various personal characteristics may influence educators' mobility and turnover decisions. Beaudin (1993) found years of experience and highest degree attained as strong predictors of departure among teachers. In contrast, Gates et al. (2006) reported a nonsignificant contribution of highest degree earned on the probability of Illinois and North Carolina principals leaving the principalship or changing schools. Both Gates et al. (2006) and Papa (2007) found a negative association between principal mobility and experience level. Not surprisingly, the chances that school principals change schools or leave their career declines as the principals' age increases (Gates et al., 2006).

There is a sparse literature that suggests a relationship between gender and principals' career transitional behaviors. Existing studies largely focus more on women's barriers to formal administrative roles (e.g. Hoff & Mitchell, 2008) and less on conditions that influence their career transitional decisions. A few studies that do exist (e.g. Fuller, Young, & Orr, 2007) found that female principals leave their positions at a rate higher than those of men. When controlling for age, however, gender has no effect on principals' likelihood of leaving or changing schools.

Findings regarding the effects of race on principals' departure decisions appear to be mixed. On the one hand, adding to the concern of retaining

minority principals reported in previous research (e.g., Chapman, 2005; Tillman, 2003), the probability of being a Hispanic principal is strongly related with changing schools, but unrelated to leaving the principalship. On the other hand, among Blacks, the chances that principals leave their position or change schools are significantly lower than that of the other racial groups (Hispanic and Whites) (Gates et al., 2006).

School Background Factors

Research that assesses the impact of occupational environment (such as school location, level, size, poverty status, concentration of minority students, and qualification of faculty) on principal's career mobility decisions is scant.

Results from those studies that do exist have identified student population demographics, urbanicity, and state policy environments as associated with school principal entrance, mobility, and departure behaviors. Gates et al.'s (2006) study indicates that whereas urban school principals are less likely than principals in rural areas to leave the system, they are more likely than suburban and rural principals to change schools. The probability of switching schools is, however, higher for principals in rural areas than for principals in the suburban or urban areas, making rural school districts the least conducive in retaining principals (Chapman, 2005). Yet, as Papa and Baxter's (2005) study in New York State suggested, urban school districts also hire minimally qualified principals (i.e., those who earned their undergraduate degrees from less competitive institutions) because they lack the resources to attract and retain highly qualified candidates. The minimally qualified candidates may be more likely to switch schools than their better-qualified counterparts.

Principals' attrition and mobility decisions depend on the racial makeup of the student body as well—that is, as the proportion of students of color increases, attraction to the principalship declines, and the probability of incumbent principals leaving for another school increases (Daresh & Capasso, 2002; Loeb, Kalogrides, & Horng, 2010; Papa, 2007). In schools where minority principals' race/ethnic groups match the majority of the student body, however, minority principals' likelihood of changing schools is lower than those of majorities (Gates et al., 2006).

Research that investigated the influence of school size on principal satisfaction and mobility is mixed. On the one hand, Chen, Blendinger, and McGrath (2000) reported no significant effects of school size on principal mobility/departure behavior. On the other hand, Papa et al. (2002) found the adverse effects of a large school environment in reducing principals' decisions to stay. Counter to Papa's study, Gates et al. (2006) found inverse relationships between school size and longevity among principals, with large schools increasing retention.

When assessed in terms of school level, middle school and high school principals are more likely than elementary school principals to change position (Gates et al., 2003). These variations in principals' career longevity suggest conditions that influence the career transitional behavior of principals in elementary and secondary schools (Johnson & Holdaway, 1994). For example, among elementary school principals, the opportunity of engaging in instructional leadership (Newton et al., 2003), and the possibility of forming teamwork and collaboration at a personal level, might act as incentives for building a longer administrative career. In contrast, among secondary school principals, the drive for student achievement, accountability, and mandates breed the climate of isolation influencing principals to either change their current school or leave the system entirely (Howard & Mallory, 2006).

Workplace Conditions

Research that directly assesses how workplace conditions impact principal departure and mobility intentions is rather scarce. Evidence from some studies (e.g., Eckman, 2004; Johnson & Holdaway, 1994; Militello & Fredette, 2006), however, identifies many challenges of the contemporary school principalship that negatively influence career transitional decisions among school principals. The summary of this work provides three major challenges.

First, excessive work overload creates a mounting challenge and role ambiguity among many principals, affecting their ability to lead their schools with sustained effort and vision (Thomas Fordham Institute, 2003; Howley et al., 2005; Winter, Rinehart, & Munoz, 2002). Reports indicate that principals today are expected to carry out numerous roles on a daily basis such as handling paperwork and phone calls, supervision and evaluation of faculty, attending meeting with parents and district personnel, participating in evening activities, handling discipline issues, participating in curriculum development, and other instructional activities, just to name few (Howley et al., 2005; Portin, 1999; Thomas Fordham Institute, 2003; Winter et al., 2002). On top of such managerial activities, principals are also expected to provide sound leadership that includes setting school wide vision, leading the curriculum and instructional programs, providing professional development for teachers, among many others. As a result, in a typical week, principals devote 60–80 hours to their jobs (Graham, 1997; Hertling, 2001; Yerkes & Guaglianone, 1998), taking significant time away from family and other social commitments. Such work overload generates role confusion (Murphy, 1994), and is among the major reasons for job dissatisfaction and job burnout among school principals (Friedman, 2002; Whitaker, 1995).

Second, recent educational reforms have added to the complexity of the principalship, generating new sets of challenges (Kafka, 2009; McGuinn, 2006). The new accountability requirements, for example, place expectations upon principals to be student-achievement and result-oriented administrators who document and provide evidence supporting that they are effective leaders (Winter & Morgenthal, 2002). While principals do not necessarily avert such result-oriented approaches to school leadership (Murphy, 1994), they resent mandated high expectations coupled with inadequate training and support, which undermines principals' morale and enthusiasm. In addition, new district, state, and federal mandates require that principals involve relevant school partners (such as parents, teachers, board members, and interest groups) in implementing various policies (Kafka, 2009). Yet, because many school partners who participate in school decision making abdicate the accountability largely to the principals, the imbalance between decision authority and decision accountability leaves principals confused and frustrated—breeding conditions that may negatively influence their career longevity (Bacharach & Mitchell, 1983; Hertling, 2001; Norton, 2003; Pounder, 2001; Pounder & Merill, 2001).

Third, researchers have found the salary of school principals is not competitive enough in light of the amount of time and the demand of the work in order to attract new entrants and retain current principals in their jobs (Graham & Messner, 1998; Papa et al., 2002; Thomas Fordham Institute, 2003; Winter et al., 2002). The differential between principal and experienced teacher salaries is often inconsequential, given that teachers are eligible for additional compensation from special duties, and given the long hours and extended contract principals work (Jacobson, 2005). The inadequate compensation of the principalship (relative to that of experienced teachers) is a greater disincentive particularly for women to enter and stay in the principalship than it is for men because typically women pursue a career in administration later in life, after serving many years as classroom teachers, when they may already be at the top of the salary scale (Harris, Arnold, Lowery, & Crocker, 2002; Shakeshaft, 1989).

An additional insight about the impact of salary on principals' career related decisions comes from Papa's (2007) study in New York, in which she examined how different salary levels impact principal's decisions to change schools. Using panel data, the researcher found that, in addition to improving retention in general, an increase in salary compensates for the disparities in principal retention created due to difficult workplace-condition factors such as schools with high percentage of minority students, schools with a high poverty index, and schools with a high percentage of uncertified teachers. That is, when principal's salaries were raised two standard deviations above the mean, disadvantaged schools boosted their ability to retain principals at the rate of their nondisadvantaged counterparts.

The Emotional Aspect of Work/Job Satisfaction

Although workplace conditions impact career transitional decisions among principals, the emotional aspect of work—that is, the affective dimension of the principalship—is even more important than financial incentives and workplace-condition factors in determining the career transitional decisions of principals (Cooley & Shen, 1999). The importance of job satisfaction for principal career longevity is predicated on research that suggests that satisfied individuals generally perform better than their dissatisfied counterparts. Satisfied individuals generate a sense of organizational ownership and commitment (Beggan, 1992; Dayne & Pierce, 2004) necessary for retention.

Specific to school administrators, Cooley and Shen (1999) used data from 457 students in 29 university-based school principal preparation programs to examine aspects of the principal's job that impact entering and leaving school administration. Results suggest that for the majority of the participants, obtaining a personally satisfying job such as improving school programs or making a societal contribution are the reasons for entering the principalship. In contrast, the need to seek more rewarding and self-fulfilling work and the desire for self-actualization are the reasons for leaving the profession. Only a minority of the participants chose the principalship for financial reasons—a group who also reported that they would leave the principalship if the compensation were inadequate.

Iannone (2001) used Herzberg's "motivation-hygiene theory" to identify motivators and hygiene factors for the principalship. The overall components that Iannone identified as enriching for principalship include direct personal feedback as opposed to control and supervision by superiors; ability to work closely with students, teachers, and parents; opportunities for professional growth and learning; ability to schedule work; the ability to plan the school's budget without involvement from above; and a sense of autonomy and personal accountability for what happens in their schools.

Taken together, these and other studies suggest that principals' sense of fulfillment, the ability to influence school-level supervisory and instructional decisions, and the opportunity for engagement and relationships with all school-level partners provide a rewarding environment that may positively contribute to principals' job longevity.

Gap and Purpose of the Study

There is limited research that examines the career transitional behaviors of school principals (e.g., Gates et al., 2006; Papa, 2007). Compounding the scarcity of literature related to principal attrition are three major gaps in the existing literature that form the basis of this study. First, although past researchers (Newton et al., 2003; Howley et al., 2005; Pounder,

2001) have shown major challenges in attracting and retaining principals, this research does not address which work factors are related to principal mobility or attrition. Empirical evidence is lacking about the type of individual, school, or district characteristics that contribute to principal turnover, which limits abilities to put in place effective strategies to enhance retention.

Second, due in part to limited sample size, whereas some studies indicate the relationships between selected antecedents (such as individual and school demographic characteristics) and principal's career-related outcomes, data analysis is limited to simple descriptive statistics. The absence of national multivariate analysis studies particularly restricts the ability to understand how policy-manipulable characteristics moderate difficult workplace-condition factors to improve retention. While there are few studies (Gates et al., 2006; Papa, 2007) that used a multivariate analysis to understand principals' *succession* behaviors, they are confined to selected states, and their results are not generalizable to the departure/mobility behavior of principals across the United States.

Third, existing research assumes principals' career transitional behaviors are largely influenced by individual process characteristics such as aspiration, undermining the contribution of school and district context as explanations for the departure and mobility. One contributing factor for this gap in the literature is the limited use of hierarchical linear modeling to examine the unobserved heterogeneity of district- and school-level effects on principal retention decisions, accounting for principal's individual characteristics. The sparse use of multilevel modeling, for example, limits the ability to examine how differences in district policy contexts (such as collective bargaining policy, district expectations and requirements, principal professional development, etc.) impact mobility and departure among principals. In order to fill this void in the literature, this study used a multilevel model approach to examine determinants of departure and mobility intentions among school principals, drawing data from the National Center for Education Statistics (NCES) School and Staffing Survey.

Research Questions

The scant research that assesses the career transitional behavior of principals (Gates et al., 2006; Ting-Hong, 1989) indicates that dissatisfied principals display different forms of exit behaviors: leaving the principalship for employment outside of education, early retirements, stepping down into a teaching position, and switching schools, among others. As intent to move and leave are the most common forms of exit behaviors reported in previous research, this study uses multilevel modeling to examine how individual, school, and workplace conditions, and the emotional aspect of characteristics (such as satisfaction with an intrinsic aspect of work), influence mobility

and departure intentions among school principals in the United States. The study addresses the following research questions:

1. To what extent are individual and school background characteristics related to principals' career departure and mobility intentions?
2. To what extent are workplace condition and salary associated with principals' career departure and mobility intentions?
3. To what degree are the emotional aspects of work (i.e. job-satisfaction characteristics) related to principals' departure and mobility intentions?
4. To what extent are district characteristics associated with principals' career departure and mobility intentions?
5. Do the characteristics that influence school principal mobility intentions also influence school principal departure intentions?

Limitations and Assets

This study is based on analysis of the Schools and Staffing Survey (SASS) 2003–2004 data set. As the SASS data are not longitudinal in nature, we were not able to follow principals over time to model their actual departure or mobility behaviors. As a result, it is possible that principals' departure or mobility intentions reported in the present study, and the explanatory variables used to describe them, may differ from principals who have actually left or switched schools. For example, individuals who reported departure intentions may choose to stay or those who reported to stay may decide to leave or move, based on a change of circumstances that influenced those initial decisions. However, in part since principals' departure and mobility intentions reflect a decision based on some durable and dissatisfying conditions that principals perceive are unchanging at the school, the district, or in the profession, the variance between principals' actual and intended departure behaviors is likely to be small. Further, given that career transitional intentions typically occur prior to actual departure behaviors (Allen, 2004), an initial step of understanding what characteristics may lead to school principal intentions of departure or mobility can serve as a proxy to understand the antecedents of the actual act.

Another limitation of this study is that we do not estimate cross-level interactions to examine the characteristics at one level that may moderate the effects of characteristics at another level. We suspect that the application of these interactions would serve more to inform the reader about the moderating effects of variables rather than systematic associations important in the processes of interest in this study. Hence, our analysis was directed specifically at informing policy and practice more formally rather than exhaustively exploring data for an academic purpose.

Additionally, while we account for state-level variations in the resultant models, we modeled only one state-level characteristic (region of the

country), largely because these data are nonexistent or difficult to acquire. This may limit our conclusions largely to district- and school-level policies and practices. Even in the presence of these deficiencies, demonstrably, we were interested primarily in assigning policy and practice recommendations that can be most reasonably applied and deriving recommendations that are most relevant to generating the desired outcome, principal retention.

Conceptual Model

Figure 1 presents a theoretical conceptualization of the career mobility and departure intentions characteristics the literature suggests is important. This conceptual figure represents the model we will test in these analyses. The figure depicts three levels of context. The first level represents the individual- and school-level characteristics including principal background, school characteristics, workplace conditions and salary, and emotional aspects of work. These characteristics are assumed to be related to a principal's intentions of moving from one school to another or leaving the profession entirely. It should be noted that individual- and school-level characteristics are considered one level in this multilevel modeling approach because there can only be one principal within each school. Consequently, it is only appropriate to represent the school-level characteristics at the same

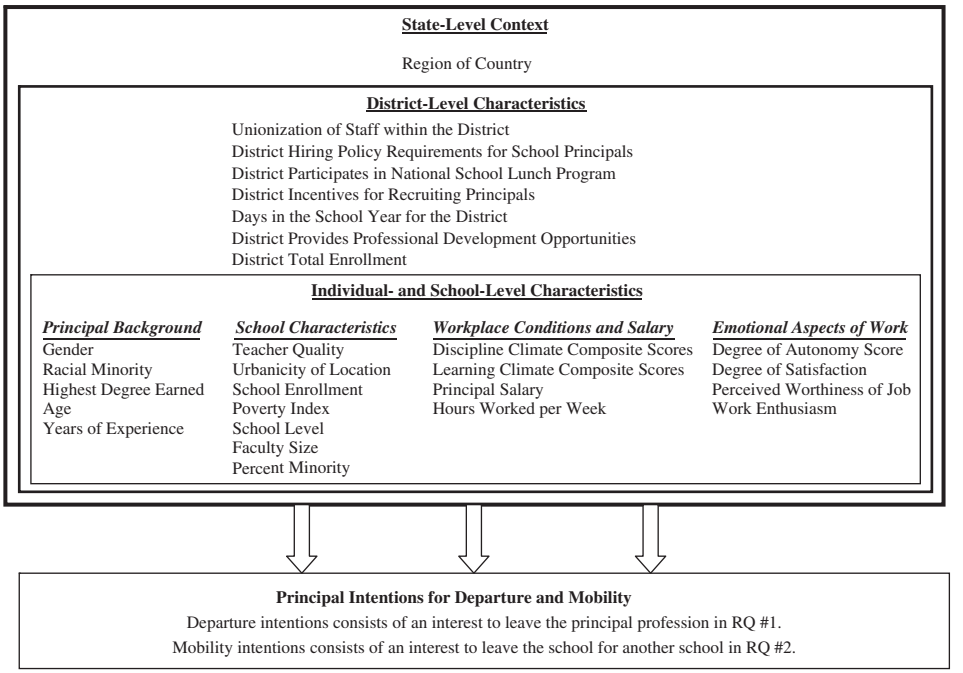

FIGURE 1 Conceptual framework.

level that principal characteristics are entered. There are, however, aspects of the school district that are assumed to be related to a principal's intentions of mobility and departure. These characteristics are provided in the box encompassing the district-level characteristics. In addition, it is also assumed that there may be characteristics at the state level which may influence a principal's intentions of mobility and departure. We do not examine specific state-level characteristics other than the *region of the country* variable in these models, but we do maintain this context as a third level in the model in order to ascertain whether state-level variation exists once accounting for characteristics at the other levels of analyses.

Research Design and the Data

To examine these particular research questions, the following data analyses used the restricted data version of the SASS. According to the NCES (Strizek, Pittsonberger, Riordan, Lyter, & Orlofsky, 2006), this study uses complex random sampling procedures, which require the use of specialized data-analysis techniques (Lee & Forthofer, 2006). The SASS is a nationally representative study conducted to offer researchers the ability to understand the characteristics of schools, school districts, and the staffing of public and private K–12 schools across the United States. As part of its broader research interests, NCES collected data on public schools, school principals, and their school districts. We delimited the data, excluding private school principals from these analyses because these schools do not have the hierarchical governance structures—school districts—common among the K–12 public schools sector. Additionally, we removed Bureau of Indian Affairs schools and their principals from these analyses because these institutions have atypical governance structures and do not typically receive funding directly from state governments.

The procedures used to link the three data files required that school principal and public school data be linked first using the SC_NCSID variable in both datasets. With both principal and school information linked, we proceeded to link this newly constructed dataset to the district data using the CCDIDLEA variable that is included in both datasets. Within the district level data, we used the STAT_ABB variable indicating the state location of the school district observed in the creation of a cluster-indicator variable used in modeling state-level variation as a random effect.

Data Specification and Methods

We used a multilevel modeling approach to estimate variations in principal characteristics and school characteristics at level 1, district characteristics at level 2, and state characteristics at level 3, contributing to principals' departure and mobility intentions. We used the nested three-level

random-intercepts logistic regression modeling approach because of its ability to generate more accurately coefficient estimates of each variable included in the models. The ability to produce more accurate results is driven in large part by the methods' estimation of random effects at each level of the model. This generates results that are less biased than coefficients that are derived from traditional modeling procedures such as the traditional logistic regression model.

Categorical Response Variables

The response/outcome variables are derived from two ordinal variables in the SASS data that we convert into dichotomous variables. The departure intentions variable asked principals whether the "principal would leave the profession for better money" in the following ordinal scale (1 = Strongly Agree, 2 = Somewhat Agree, 3 = Somewhat Disagree, and 4 = Strongly Disagree). The linear regression modeling framework requires that the variable be normally distributed; however, the response variables examined in the SASS were not normally distributed in their original, four-ordered categories. Consequently, we chose to dichotomize the variable into a two-category indicator variable where 1 = those principals who strongly agree or somewhat agree that they would leave the profession for better money and 0 = strongly disagree or somewhat disagree with this statement. The mobility intentions variable asked whether the "principal is thinking about transferring from their school" in the following the same ordinal scale (1 = Strongly Agree, 2 = Somewhat Agree, 3 = Somewhat Disagree, and 4 = Strongly Disagree). This variable was also not normally distributed, so we decided to dichotomize the variable into a two-category indicator variable where 1 = those principals who strongly agree or somewhat agree that they were thinking about transferring from their school and 0 = strongly disagree or somewhat disagree with this statement.

Statistical Model

Given that we used a three-level random intercepts logistic regression model, we believed that specifying the model using the Rabe-Hesketh and Skrondal (2008) analytic approach was more practical. The analytic model utilized for this study is specified as:

$$\text{logit}\left\{\Pr\left(y_{ijk}=1\left|\mathrm{X}_{ijk},\zeta_{jk}^{(2)},\zeta_{k}^{(3)}\right.\right)\right\}=\beta_1+\beta_2\chi_{2ijk}+\beta_3\chi_{3ijk}+\cdots$$
$$+\beta_{29}\chi_{29,k}+\zeta_{jk}^{(2)}+\zeta_{k}^{(3)}$$

where the logit-link function is used to ascertain the probability of public school principal$_i$ in school district$_j$ within state$_k$ indicates they intend

to move schools or intend to depart the principalship given X_{ijk}, where X represents a vector of covariates in these analyses. Random intercepts for school districts$_j$ within states$_k$ is represented by $\zeta_{jk}^{(2)}$ while random intercepts for states$_k$ is represented by $\zeta_k^{(3)}$.[1] These analyses used the logit-link function because the outcome variable—created from an ordinal variable—was transformed into a dichotomous variable as noted in the previous section. All analyses presented throughout this paper were performed using Stata SE 10 using the *xtmelogit* command and its related postestimation procedures.

Sample Sizes, Levels of Analyses, and Missing Data

Missing data without identification were excluded from the analysis using traditional listwise deletion methods. However, if cases were identified as having "skipped the question legitimately" because the question did not pertain to those particular subjects, we dummy coded them to identify these cases. The sample sizes used for analyses include approximately 7,740 principals and their schools subsumed within approximately 4,550 school districts, all within the United States. Summary statistics of variables included in the multilevel model, and variables excluded from the final analysis are respectively provided on Table 1 and Table 2.

Model Building Procedures

Model building proceeded by estimation of a random-intercepts, generalized linear mixed model with no covariates included in the equation to ascertain the appropriateness of multilevel modeling given the probability distribution in the outcome variables, mobility intention and departure intention. We used Laplacian estimation along with 7-point Adaptive Gauss-Hermite quadrature estimation to compute these model building equations;[2] however, we used 15-point Adaptive Gauss-Hermite quadrature estimation in the final results reported in the tables of estimated coefficients.[3] Typically, the literature refers to this first model as the unconditional model because no variables are conditioning the relationships of the response variables. Next, we estimated random-intercepts, logistic regression models with each covariate entered as separate models during this initial phase of model building. We eliminated variables from consideration in later models if these models' Wald χ^2 tests resulted in $p > 0.30$ (Hosmer & Lemeshow, 2000). After we built the model from the variables included in the analyses, we retested the inclusion of the variables omitted during the earlier steps as a secondary check to ensure the accuracy of the results. As expected, initial decisions to exclude these variables based on elimination criteria during the model building phase was further supported during this last iteration in the more fully specified models.

TABLE 1 Summary Statistics of Variables Included in the Multilevel Models.

Variable	SASS Label	Obs.	Mean	Std. Dev.	Min.	Max.
Included in Multilevel Models						
Response Variables						
Departure	A0046	7210	0.246	0.431	0	1
Mobility	A0047	7210	0.229	0.420	0	1
Principal Characteristics (Operating at Level One)						
Female	A0254	7740	0.399	0.490	0	1
Minority	RACETH_P	7740	0.160	0.366	0	1
Age(x-49)	AGE_P	7740	0.492	7.877	−23	31
Age(x-49)^{2*}	AGE_P	7740	62.279	82.928	0	961
Ed.S.	A0039	7740	0.302	0.459	0	1
Doctorate	A0039	7740	0.091	0.287	0	1
Years Experience	A0025	7740	8.029	7.268	0	41
Years Experience^{2*}	A0025	7740	117.277	197.505	0	1681
School Context Variables (Operating at Level One)						
Secondary Level	SCHLEVEL	7740	0.392	0.488	0	1
Combined Levels	SCHLEVEL	7740	0.108	0.311	0	1
Salary(x-5) ($10,000 units)	A0263	7740	5.958	1.732	−5	10
Job Worth It	A0043	7740	3.285	0.864	0	3
Enthusiasm	A0048	7740	3.101	0.994	0	3
Satisfaction	A0045	7740	3.063	0.836	0	3
School Enrollment	SCHSIZE	7740	−0.456	2.406	−6	5
Large Urban City	URBANS03	7740	0.233	0.423	0	1
Urban Fringe	URBANS03	7740	0.421	0.494	0	1
Small Town/Rural	URBANS03	7740	0.345	0.476	0	1
Work Hours(x-60)	A0040	7740	0.141	12.427	−59	100
Discip. Climate2	—	7740	$1.97e^{-09}$	1.000	−1.890	2.352
Learning Climate1	—	7740	$1.03e^{-09}$	1.000	−5.528	1.855
District Context Variables (Operating at Level Two)						
District Poverty	NSLAPP_D	7740	42.534	23.113	0	100
Training Not Req.	D0101	7210	0.184	0.388	0	1
Training Used	D0101	7210	0.485	0.500	0	1
Training Req.	D0101	7210	0.330	0.470	0	1
Intern. Valid Skip	D0293	7210	0.082	0.275	0	1
Internship Yes	D0293	7210	0.576	0.494	0	1
Internship No	D0293	7210	0.341	0.474	0	1
State Context Variables (Operating at Level Three)						
Midwest	REGION	7210	0.245	0.430	0	1
South	REGION	7210	0.342	0.475	0	1
West	REGION	7210	0.268	0.443	0	1

Note. *Indicates a squared value.

Consistent with our conceptual framework, we included individually and as blocks of covariates in the following sequence: 1) principal background characteristics, 2) school-level characteristics, 3) workplace conditions and salary, 4) emotional aspects of work, 5) district-level characteristics, and 6) the state-level characteristic. We tested the contribution of

TABLE 2 Summary Statistics of Variables Excluded from the Final Multilevel Models.

Variable	SASS Labels	Obs.	Mean	Std. Dev.	Min.	Max.
School Context Variables (Operating at Level One)						
Minority Enrollment	MINENR	7740	32.532	31.896	0	100
% Teaching to High Stand.	A0149	7740	81.380	18.106	0	100
Disciplinary Climate 1	—	7740	$4.69e^{-09}$	1.000	−1.437	3.819
Learning Climate 2	—	7740	$5.36e^{-09}$	1.000	−6.026	1.552
Auton. of Curriculum	—	7740	$1.69e^{-09}$	1.000	−4.590	0.975
District Context Variables (Operating at Level Two)						
Total Enrollment (x-3)	D0050	7210	29,871.760	105,822.500	0	119114
Num. Students Minority	NMINST_D	7210	17,079.260	78,758.520	0	926179
Number of Teachers	CONTEA	7210	1,714.215	6,649.847	0	88713
Number of Principals	D0070	7210	38.651	102.312	0	1164
Working Days/Year (centered at 140 days)	D0063	7210	178.910	5.896	0	143
Collective Bargaining	D0094	7210	0.627	0.484	0	1
Meet and Confer	D0094	7210	0.085	0.279	0	1
No Collective Bargaining	D0094	7210	0.288	0.453	0	1
Incentives Valid Skip	D0102	7210	0.082	0.275	0	1
Incentives Yes	D0102	7210	0.040	0.279	0	1
Incentives No	D0102	7210	0.878	0.328	0	1
Support	D0103	7210	0.908	0.289	0	1
Large Urban City	URBAND03	7210	0.212	0.409	0	1
Urban Fringe	URBAND03	7210	0.439	0.496	0	1
Small Town/Rural	URBAND03	7210	0.348	0.464	0	1
Certification Not Req.	D0097	7210	0.015	0.121	0	1
Certification Used	D0097	7210	0.086	0.281	0	1
Certification Required	D0097	7210	0.899	0.301	0	1
Grad Degree Not Req.	D0098	7210	0.040	0.195	0	1
Grad Degree Used	D0098	7210	0.136	0.343	0	1

(*Continued*)

TABLE 2 (Continued)

Variable	SASS Labels	Obs.	Mean	Std. Dev.	Min.	Max.
Grad Degree Required	D0098	7210	0.825	0.380	0	1
Teaching Exp. Not Req.	D0099	7210	0.023	0.150	0	1
Teaching Exp. Used	D0099	7210	0.203	0.402	0	1
Teaching Exp. Req.	D0099	7210	0.774	0.418	0	1
Admin. Exp. Not Req.	D0100	7210	0.086	0.280	0	1
Admin. Exp. Used	D0100	7210	0.729	0.445	0	1
Admin. Exp. Req.	D0100	7210	0.185	0.388	0	1
Technique Valid Skip	D0294	7210	0.082	0.275	0	1
Technique Yes	D0294	7210	0.652	0.476	0	1
Technique No	D0294	7210	0.266	0.442	0	1
Supervision Valid Skip	D0295	7210	0.082	0.275	0	1
Supervision Yes	D0295	7210	0.776	0.417	0	1
Supervision No	D0295	7210	0.142	0.349	0	1
Technology Valid Skip	D0296	7210	0.082	0.275	0	1
Technology Yes	D0296	7210	0.747	0.435	0	1
Technology No	D0296	7210	0.171	0.376	0	1
Curriculum Valid Skip	D0297	7210	0.082	0.275	0	1
Curriculum Yes	D0297	7210	0.807	0.395	0	1
Curriculum No	D0297	7210	0.110	0.314	0	1
Networking Valid Skip	D0298	7210	0.082	0.275	0	1
Networking Yes	D0298	7210	0.677	0.468	0	1
Networking No	D0298	7210	0.240	0.427	0	1

these blocks of variables in concert with other variables and as individual variables using either univariate or multivariate Wald hypothesis testing procedures. For checks of model fit, we used the model Wald χ^2 test and the model log-likelihood values. For model comparisons between two or more models, we used the Deviance statistic, Akaike's Information Criterion (AIC) index, and the Bayesian Information Criterion (BIC) index. As noted earlier, after selecting the final model, we retested the inclusion of variables removed in earlier stages of model building through several reiteration cycles to verify exclusion of these variables.

In addition, we employed principal components factor analysis to generate a series of principal components prior to regression modeling. We followed procedures in Stata Press (2007) to develop these principal components. Table 3 provides results of the principal components analyses performed for data reduction purposes.

Random Effects

The results reported include the random effect estimates in standard deviation units. These statistics describe the variation in the model that exists in the estimation of the intercepts at the district and state levels in each model specified. This allows us to make some general statements about the amount of heterogeneity or variation explained at particular levels with the inclusion of additional variables. To illustrate this point, the unconditional model for mobility intentions (Table 4) indicates a random effect of $\sqrt{\psi^{(2)}}$ District = 0.564. This level of variation in the random intercept for districts decreases approximately 10% when we include school principal background characteristics. Examining the reduction in variation from the fully unconditional model without any variables included in the model $\sqrt{\psi^{(2)}}$ District = 0.564 and Conditional Model 3 $\sqrt{\psi^{(2)}}$ District = 0.314, we find an approximate 44% reduction in the variation at the district level.

Conversely, the variables included appear to be more able to explain district variations for departure models specified in Table 5. The total reduction in variation in the district random effect goes from $\sqrt{\psi^{(2)}}$ District = 0.453 in the fully unconditional model to $\sqrt{\psi^{(2)}}$ District = 0.242 in the fully specified model. This drop means that 89% of district variation is explained by the included variables in the fully specified model. While the variables included in the mobility intentions models appear to explain some degree of the phenomenon, these particular covariates are more useful in predicting departure intentions.

These results suggest that most of the characteristics examined in this study indeed account for much of the variation in principal responses to intentions of departure and to a significantly lesser extent mobility intentions.

TABLE 3 Principal Components Descriptions, Path Loadings, and Variance Explained.

Principal Components and SASS Item Labels	Item Description	Component Loadings
School Learning Climate 1		
A0204[a]	Frequency of Problems with Physical Conflicts	0.632
A0210[a]	Frequency of Problems with Physical Abuse of Teachers	0.482
A0211[a]	Frequency of Problems with Student Racial Tensions	0.526
A0212[a]	Frequency of Problems with Student Bullying	0.641
A0213[a]	Frequency of Problems with Verbal Abuse of Teachers	0.815
A0214[a]	Frequency of Problems with Widespread Disorder in Classroom	0.627
A0215[a]	Frequency of Problems with Disrespect for Teachers	0.790
	Variance Explained (%)	0.429
School Learning Climate 2		
A0205[a]	Frequency of Problems with Robbery/Theft	0.694
A0206[a]	Frequency of Problems with Vandalism	0.659
A0207[a]	Frequency of Problems with Alcohol Use	0.803
A0208[a]	Frequency of Problems with Drug Abuse	0.827
A0209[a]	Frequency of Problems with Weapons	0.599
A0216[a]	Frequency of Problems with Gang Activities	0.600
	Variance Explained (%)	0.494
School Disciplinary Climate 1		
A0217[b]	Extent Problem with Student Tardiness	0.690
A0218[b]	Extent Problem with Student Absenteeism	0.757
A0219[b]	Extent Problem with Class Cutting	0.806
A0220[b]	Extent Problem with Teacher Absenteeism	0.531
A0221[b]	Extent Problem with Student Pregnancy	0.772
A0222[b]	Extent Problem with Drop Outs	0.807
A0223[b]	Extent Problem with Student Apathy	0.712
	Variance Explained (%)	0.535
School Disciplinary Climate 2		
A0224[b]	Extent Problem with Parental Involvement	0.793
A0225[b]	Extent Problem with Poverty	0.859
A0226[b]	Extent Problem with Unprepared Students	0.876

A0227[b]	Extent Problem with Student Health	0.777
	Variance Explained (%)	0.684
Autonomy of Curriculum		
A0062[c]	Principals' Influence on Setting Performance Standards	0.815
A0069[c]	Principals' Influence on Establishing Curriculum	0.838
A0076[c]	Principals' Influence on Determining Content of Teacher Professional Development	0.684
	Variance Explained (%)	0.611
Autonomy of Supervision		
A0084[c]	Principals' Influence on Teacher Evaluations	0.580
A0091[c]	Principals' Influence on Hiring Teachers	0.703
A0098[c]	Principals' Influence on Disciplinary Policy	0.673
A0105[c]	Principals' Influence on Spending	0.598
	Variance Explained (%)	0.410

[a]Variable Scale (1 = Happens Daily; 2 = Happens at Least Once a Week; 3 = Happens at Least Once a Month; 4 = Happens on Occasion; 5 = Never Happens).
[b]Variable Scale (1 = Not a Problem; 2 = Minor Problem; 3 = Moderate Problem; 4 = Serious Problem).
[c]Variable Scale (1 = No Influence; 2 = Minor Influence, 3 = Moderate Influence; 4 = Major Influence).

RESULTS

The following section details the analyses results and findings related to the nested three-level random-intercepts logistic regression models (Table 4 and Table 5) that assess how principal, school, and workplace conditions, the emotional aspects of work, and district and state characteristics are associated with both departure and mobility intentions. Based on Conditional Model 3 in both Tables 4 and 5, several principal background characteristics are statistically significantly related to principals' career departure and mobility intentions, including gender, age, and work experience. While years of experience and years of experience squared do not appear to be significantly related to departure, the joint Wald hypothesis test $\chi^2(2) = 6.53$, $p < 0.05$ indicates that the age construct is statistically significant, and contributes to departure intentions in Conditional Model 3. Principal minority status is statistically significantly related to departure intentions but not to mobility intentions. Inversely, a principal's highest level of education is related to principal mobility intentions but not related to principal's departure intentions.

Generally, as an increase in principals' age is associated with reduced mobility and departure intentions, this finding is consistent with previous research (Gates et al., 2006) that suggests as principals become older, the probability of switching schools or leaving their careers declines, in part due to lower perceived (or actual) opportunities.

Among the gender groups, women principals have lower odds of planning to switch schools by a factor of 0.79 times and lower odds of intending to leave the principalship by a factor of 0.81 times that of men principals. Gender's effect on mobility and departure intentions remains significant, even once school-context, district-level, and state-level characteristics are accounted for. Yet, gender's effect was depressed from Conditional Model 1, where only individual background characteristics are accounted for, to Conditional Model 3 when accounting for all characteristics. This indicates that variables at the school and district levels can minimize the differences between male and female principals' career departure intentions.

Minority (i.e., all non-White) principals' intentions of switching schools is lower than those of majority principals by a factor of 0.87 times lesser when accounting for individual, school-context, district, and state characteristics. Conversely, minority principals' intentions of departure increases by a factor of 1.21 times over non-White principals when accounting for all other characteristics.

While principals with an education specialist degree are statistically no more or less likely to have intentions of moving schools than principals with a master's degree, a doctoral degree increases the principals' intentions of changing schools by a factor of 1.56 times more than a principal with a master's degree. This result indicates that once all other characteristics are

TABLE 4 Estimates of the Log-Odds and Odds Ratios for School Principal Mobility Intentions Using Three-Level, Logistic Random-Intercepts Models.

	Unconditional Model	Conditional Model 1 Individual Characteristics		Conditional Model 2 School Context Variables		Conditional Model 3 District/State Context Variables	
	Log-Odds (SE)	Log-Odds (SE)	OR[interval]	Log-Odds (SE)	OR[interval]	Log-Odds (SE)	OR[interval]
Fixed Effects							
β_1 intercept	−1.302(0.060)‡	−1.138(0.092)‡	—	1.505(0.159)‡	—	1.812(0.213)‡	—
Principal Characteristics (Operating at Level One)							
β_2 female		−0.210(0.062)‡	0.81[0.72−0.92]	−0.208(0.070)‡	0.81[0.71−0.93]	−0.233(0.075)†	0.79[0.68−0.92]
β_3 minority		−0.281(0.090)‡	0.76[0.63−0.90]	−0.260(0.097)†	0.77[0.64−0.93]	−0.141(0.102)	0.87[0.71−1.06]
β_4 age		−0.045(0.005)‡	0.96[0.95−0.97]	−0.047(0.005)‡	0.95[0.94−0.96]	−0.045(0.006)‡	0.96[0.95−0.97]
β_5 age^{2*}		−0.002(0.004)‡	0.99[0.99−0.99]	−0.002(0.001)‡	0.99[0.99−0.99]	−0.002(0.001)‡	0.99[0.99−0.99]
β_6 EdS		0.006(0.069)	1.01[0.88−1.15]	0.093(0.073)	1.10[0.95−1.27]	0.100(0.078)	1.11[0.95−1.29]
β_7 doctorate		0.172(0.105)	1.18[0.97−1.46]	0.389(0.114)‡	1.48[1.18−1.85]	0.444(0.123)‡	1.56[1.23−1.98]
β_8 years experience		0.036(0.001)†	1.04[1.01−1.06]	0.007(0.014)	1.00[0.98−1.03]	0.012(0.016)	1.01[0.98−1.04]
β_9 years experience^2		−0.002(0.092)‡	0.99[0.99−0.99]	−0.001(0.001)	0.99[0.99−1.00]	−0.001(0.000)**	0.99[0.99−0.99]
School Context Variables (Operating at Level One)							
β_{10} secondary level				−0.015(0.074)	0.98[0.85−1.37]	−0.065(0.080)	0.94[0.80−1.10]
β_{11} combined levels				0.088(0.102)	1.09[0.89−1.33]	0.095(0.115)	1.10[0.88−1.38]
β_{12} school enrollment				−0.043(0.017)**	0.96[0.93−0.99]	−0.030(0.184)	0.97[0.94−1.01]
β_{13} urban				−0.361(0.091)‡	0.70[0.58−0.95]	−0.385(0.100)‡	0.68[0.56−0.83]
β_{14} rural/small town				0.013(0.078)	1.01[0.87−1.18]	0.018(0.083)	1.02[0.87−1.20]
β_{15} salary				−0.122(0.029)‡	0.89[0.84−0.94]	−0.142(0.030)‡	0.87[0.82−0.92]
β_{16} work hours				0.007(0.003)‡	1.01[1.00−1.01]	0.007(0.003)*	1.01[1.00−1.01]
β_{17} job worth it				−0.414(0.038)‡	0.66[0.61−0.71]	−0.401(0.041)‡	0.67[0.62−0.73]
β_{18} job enthusiasm				−0.428(0.035)‡	0.65[0.61−0.69]	−0.419(0.037)‡	0.66[0.61−0.71]
β_{19} job satisfaction				−0.414(0.038)‡	0.66[0.61−0.71]	−0.451(0.041)‡	0.64[0.59−0.69]
β_{20} disciplinary climate 2				0.072(0.036)**	1.08[1.00−1.15]	0.084(0.039)**	1.09[1.01−1.17]
β_{21} learning climate 1				−0.089(0.034)†	0.92[0.86−0.98]	−0.074(0.037)**	0.93[0.86−0.99]

(*Continued*)

TABLE 4 (Continued)

	Unconditional Model	Conditional Model 1 Individual Characteristics		Conditional Model 2 School Context Variables		Conditional Model 3 District/State Context Variables	
	Log-Odds (SE)	Log-Odds (SE)	OR[interval]	Log-Odds (SE)	OR[interval]	Log-Odds (SE)	OR[interval]
β_{22} autonomy of supervision				−0.082(0.030)†	0.92[0.87−0.98]	−0.084(0.032)†	0.92[0.86−0.98]
Fixed Effects							
District Context Variables (Operating at Level Two)							
β_{23} internship required						−0.173(0.076)**	0.84[0.72−0.98]
β_{24} skipped internship						0.010(0.132)	1.01[0.78−1.31]
β_{25} training required						−0.201(0.099)**	0.82[0.67−0.99]
β_{26} training used-not req.						−0.061(0.090)	0.94[0.79−1.12]
State Context Variables (Operating at Level Three)							
β_{27} west						0.064(0.147)	1.07[0.80−1.42]
β_{28} south						−0.473(0.149)‡	0.62[0.47−0.83]
β_{29} midwest						0.308(0.146)**	1.36[1.02−1.81]
Random Effects							
$\sqrt{\psi^{(2)}}$ district	0.564	0.507		0.364		0.314	
$\sqrt{\psi^{(3)}}$ state	0.330	0.294		0.369		0.189	
Model Fit Statistics							
ln L	−4,125	−4,029		−3,556		−3,001	
Deviance	8,250	8,058		7,112		6,002	
AIC	8,256	8,080		7,159		6,064	
BIC	8,277	8,156		7,326		6,274	

Note. Model sample sizes (Principals = 7,740; Districts = 4,550; States = 50). Models estimated using 15 integration point adaptive quadrature.
*Indicates a squared value.
**$p < 0.05$.
†$p < 0.01$.
‡$p < 0.005$.

TABLE 5 Estimates of the Log-Odds and Odds Ratios for School Principal Departure Intentions Using Three-level, Logistic Random-intercepts Models.

	Unconditional Model	Conditional Model 1 Individual Characteristics		Conditional Model 2 School Context Variables		Conditional Model 3 District/State Context Variables	
	Log-Odds (SE)	Log-Odds (SE)	OR[interval]	Log-Odds (SE)	OR[interval]	Log-Odds (SE)	OR[interval]
Fixed Effects							
β_1 intercept	−1.214(0.067)‡	−1.172(0.096)‡	–	1.469(0.147)‡	–	1.388(0.206)‡	–
Principal Characteristics (Operating at Level One)							
β_2 female		−0.273(0.060)‡	0.76[0.68−0.86]	−0.221(0.068)‡	0.80[0.70−0.92]	−0.208(0.073)‡	0.81[0.70−0.94]
β_3 minority		0.127(0.081)	1.14[0.97−1.33]	0.204(0.087)**	1.23[1.03−1.45]	0.192(0.093)**	1.21[1.01−1.45]
β_4 age		−0.017(0.005)‡	0.98[0.97−0.99]	−0.016(0.005)‡	0.98[0.98−0.99]	−0.017(0.005)‡	0.98[0.97−0.99]
β_5 age^{2*}		−0.002(0.000)‡	0.99[0.99−0.99]	−0.002(0.000)‡	0.99[0.99−0.99]	−0.002(0.001)‡	0.99[0.99−0.99]
β_6 EdS		−0.088(0.067)	0.92[0.80−1.04]	−0.031(0.070)	0.97[0.84−1.11]	−0.069(0.075)	0.93[0.81−1.08]
β_7 doctorate		0.261(0.108)**	0.77[0.62−0.95]	−0.109(0.116)	0.90[0.71−1.13]	−0.120(0.125)	0.89[0.69−1.13]
β_8 years experience		−0.042(0.012)‡	1.04[1.02−1.07]	0.015(0.013)	1.02[0.99−1.04]	0.011(0.014)	1.01[0.98−1.04]
β_9 years experience^{2*}		−0.001(0.000)†	0.99[0.99−0.99]	−0.000(0.000)	0.99[0.99−1.00]	0.000(0.001)	1.00[0.99−1.00]
School Context Variables (Operating at Level One)							
β_{10} secondary level				0.106(0.072)	1.11[0.97−1.28]	0.099(0.077)	1.10[0.95−1.28]
β_{11} combined levels				0.072(0.101)	1.07[0.88−1.31]	0.053(0.113)	1.06[0.85−1.32]
β_{12} school enrollment				−0.029(0.016)	0.97[0.94−1.00]	−0.030(0.018)	0.97[0.94−1.00]
β_{13} urban				−0.024(0.086)	0.98[0.83−1.16]	−0.029(0.092)	0.97[0.81−1.16]
β_{14} rural/small town				0.085(0.076)	1.09[0.94−1.26]	0.087(0.080)	1.09[0.93−1.28]
β_{15} salary				−0.123(0.027)‡	0.88[0.84−0.93]	−0.132(0.029)‡	0.88[0.83−0.93]
β_{16} work hours				0.003(0.003)	1.00[0.99−1.01]	0.003(0.003)	1.00[0.99−1.01]
β_{17} job worth it				−0.628(0.037)‡	0.53[0.50−0.57]	−0.635(0.039)‡	0.53[0.49−0.57]
β_{18} job enthusiasm				−0.475(0.033)‡	0.62[0.58−0.66]	−0.463(0.035)‡	0.63[0.59−0.67]
β_{19} job satisfaction				−0.213(0.037)‡	0.81[0.75−0.87]	−0.220(0.040)‡	0.80[0.74−0.87]
β_{20} disciplinary climate 2				0.102(0.035)‡	1.11[1.03−1.18]	0.072(0.037)	1.07[0.99−1.16]
β_{21} learn climate 1				0.027(0.034)	1.03[0.96−1.10]	0.007(0.036)	1.01[0.94−1.08]

(*Continued*)

TABLE 5 (Continued)

	Unconditional Model	Conditional Model 1 Individual Characteristics		Conditional Model 2 School Context Variables		Conditional Model 3 District/State Context Variables	
	Log-Odds (SE)	Log-Odds (SE)	OR[interval]	Log-Odds (SE)	OR[interval]	Log-Odds (SE)	OR[interval]
β_{22} autonomy of supervision				−0.071(0.029)**	0.93[0.88−0.99]	−0.080(0.031)†	0.92[0.87−0.98]
Fixed Effects							
District Context Variables (Operating at Level Two)							
β_{23} internship required						−0.046(0.073)	0.96[0.83−1.10]
β_{24} skipped internship						−0.105(0.132)	0.90[0.70−1.17]
β_{25} training required						−0.084(0.096)	0.92[0.76−1.11]
β_{26} training used−not req.						−0.039(0.088)	0.96[0.81−1.14]
State Context Variables (Operating at Level Three)							
β_{27} west						0.367(0.154)**	1.44[1.07−1.95]
β_{28} south						0.307(0.150)**	1.36[1.01−1.82]
β_{29} midwest						0.198(0.154)	1.22[0.90−1.65]
$\sqrt{\psi^{(2)}}$ Random Effects							
district	0.453	0.470		0.242		0.052	
$\sqrt{\psi^{(3)}}$ state	0.404	0.380		0.226		0.207	
Model Fit Statistics							
ln L	−4,256	−4,217		−3,623		−3,122	
Deviance	8,512	8,433		7,245		6,244	
AIC	8,518	8,455		7,293		6,306	
BIC	8,539	8,532		7,460		6,517	

Note. Model sample sizes (Principals = 7,740; Districts = 4,550; States = 50). Models estimated using 15 integration point adaptive quadrature.
*Indicates a squared value.
**$p < 0.05$.
†$p < 0.01$.
‡$p < 0.005$.

accounted for, principals with doctoral degrees are more likely to move to another school, perhaps in order to seek out better opportunities that their education level affords them. While statistically nonsignificant, principals with doctoral degrees are less likely to propose leaving the principalship by a factor of 0.89 times lower than their counterparts with master's degree.

Conventional assumptions suppose urban schools encounter workplace challenges (including concentrated poverty, student misbehavior, etc.) that conflict with career longevity intentions. Yet, our findings suggest that career mobility intentions of principals in urban school districts are significantly lower than those of their suburban counterparts. In contrast to career mobility, career departure intentions are unrelated to urbanicity when controlling for all other characteristics. These findings are particularly salient for rural school districts. In single-predictor multilevel regression models, for example, rural school principals' intentions of departure was greater by a factor of 1.45 times that of suburban school principals (results of these one-predictor models may be requested from the authors). Yet, the attenuation of the rural effect on principals' intentions of leaving the profession dropped down to a nonsignficant level (*Odds Ratio* = 1.09, $p > 0.05$) in the final model, indicating that its effect can be countered by workplace-condition factors considered in the state-, district-, and school-contexts model.

While schools with large student populations are assumed to increase principals' work load, undermining job satisfaction, school size was found to be unrelated to either intentions of mobility or intentions of departure when controlling for all other covariates. Although previous research shows the difficulty of retaining principals in poor and minority schools, findings from the multilevel models provide no credence to this assertion, supporting what some researchers (Gates et al., 2003) found, that principals are not fleeing or intending to flee poor and disadvantaged schools.

As expected, salary is strongly related with principal departure and mobility intentions. For example, a one-unit ($10,000) increase in principals' salary reduces their intentions of career mobility by a factor of 0.87 times and departure intentions by a factor of 0.88 times while accounting for all school, district-context, and state characteristics. It is important to note that compared to one-predictor regression models, the fully specified random-intercepts logistic regression models indicate only modest declines in salary's effect on both mobility and departure, suggesting that salary maintains its level of influence even after accounting for all other characteristics.

Contrary to the belief that work overload creates job dissatisfaction and increases the propensity to leave or change schools, an increase in the number of weekly hours principals spend on work-related activities is unrelated to departure intentions. However, weekly work hours do increase intentions of changing schools by a factor of 1.01 ($p < 0.005$). In other

words, the amount of time principals spend on work-related activities is not enough of a disincentive to contribute to principals' intentions of leaving but may be somewhat related to moving.

Supporting the contention that a negative work environment will undermine the moral well-being of teacher and administrator (Taylor & Tashakkori, 1995), the degree to which principals plan to change schools is related to their perceptions of the school's disciplinary climate. Hence, a one–standard deviation increase in reported nonconducive disciplinary climate (characterized by student class cutting, absenteeism, tardiness, pregnancy, dropping out, apathy, or teacher absenteeism) will increase principals' intentions of changing schools by a factor of 1.09 times, but is statistically unrelated to their intentions to leave the principalship.

As expected, principals' career mobility and departure are influenced by the amount of latitude their work affords them. A one–standard deviation increase in principals' level of autonomy on *supervision* (i.e. principal's perceived influence over spending, teacher evaluations, hiring teachers, and disciplinary policies) reduces the odds that the principal would either move or depart the profession by a factor of 0.92 times.

The characteristics that equally influenced both principals' mobility and departure intentions are the emotional aspects of work (job satisfaction) measures. Results suggest that the three measures of job satisfaction (i.e., principals' belief that their job is worthy, their assessment of their satisfaction with the district, and their level of enthusiasm with the principalship) significantly reduce their departure and mobility intentions. In all of these three cases, individuals who reported higher levels of satisfaction were less likely to plan leaving or switching schools.

Principals' mobility, and to some degree their departure intentions, are influenced by district-context characteristics. While the relationships between districts characteristics are in the same direction, the relationships are statistically significant only for principal mobility intentions. Districts that provide *internship* and *training* for their principals on a mandatory basis reduce principals' mobility intentions by a factor of 0.84 and 0.82 respectively over districts that do not provide these opportunities for their principals. Yet, these professional development opportunities are not statistically significantly related to principals' departure intentions. Principals' departure and mobility intentions are also related to the geographic regions in which they work. Principals in the Midwest indicated having higher odds of changing schools by a factor of 1.36 times than that of their Northeast counterparts. Intentions of departure among Midwest principals are, however, not statistically significantly different from their counterparts from the Northeast. While principals in the South are less likely to plan changing schools than their counterparts in the Northeast, they are more likely to intend leaving the principalship than principals in the Northeast.

DISCUSSION

This study examines how individual, school, district, and workplace conditions, and the emotional aspect of work, are associated with principals' mobility and departure intentions. Assessments of the findings suggest patterns of convergence and divergence with prior studies on this topic.

The findings for individual-level characteristics suggest that gender, age, and years of experience are significantly related to departure and mobility intentions, but these relationships tend to diverge from what we know in the conventional literature. For example, despite the prevailing organizational theory (Kanter, 1977) and some research (Gupton & Slick, 1996; Oplatka, 2006; Shakeshaft, 1999) that suggested workplace challenges conspire against women's commitment and aspiration to build a long career in administration, women principals in the present study are less likely to plan leaving or switching from their current schools than men. These findings suggest variations in the way men and women principals perceive opportunities and barriers within the structure of educational organizations and how those variations impact career transitional intentions (Hoff & Mitchell, 2008; Reynolds, White, Brayman, & Moore, 2008). Specifically, in the field, which is still dominated by men, the perception persists that men can leave the principalship or switch schools without risking their current and future career mobility. The opportunity cost for men of changing schools or leaving the principalship is not so great as to limit their career transitional decisions.

Conversely, although career-oriented female principals circumvent most barriers against women in leadership (Christman, Holtz, Perry, Sperman, & Williams, 1995; Tabin & Coleman, 1993; Bergam & Hallberg, 2002; Shakeshaft, 1989; Wirth, 2004), women principals are more likely than men principals to perceive higher opportunity costs if they leave or change schools. Even if they encounter more job dissatisfaction than men, they are less likely to propose either departure or mobility intentions.

Similarly, counter to past research that indicates high job satisfaction and low organizational commitment increase minorities' tendency of moving to another organization (Hom & Griffeth, 1996; Roberson, 2004; Wilson, 2009), principals of color in this study were less likely to plan switching schools than their White peers. Insight from labor economics research (e.g., Black, 1995; Whatley & Sedo, 1998) might explain why principals of color may choose to stay in their present school relative to their White counterparts. This line of research stipulates that due to actual or perceived discrimination in hiring, employees of color will search not only for type-of-job match, but also for racial-job match. Since there is a limited number of schools that non-White principals consider nondiscriminatory, the costs of job searching quickly become too prohibitive for minority principals to contemplate seriously switching schools. To test the credibility of this assumption, we conducted a supplementary analysis of the data in which we examined the

concentration of minority students in schools served by minority principals, relative to those served by White principals. We found that non-White students' proportions in schools served by minority principals is significantly higher (71%) than those served by White principals (21%).

Despite lower intentions of switching schools, minority principals are more likely to plan leaving the principalship entirely. It is possible to infer from this seeming conflicting finding that conditions that influence minority principals' intentions to remain in the same school and those that impact their decisions to leave the profession are separate. That is, the positive workplace condition factors that reduce minority principals' vulnerability to switch schools are not potent enough to remove the multifold barriers minority administrators encounter in their career transitional trajectories reported elsewhere (e.g. Bloom & Erlandson, 2003).

As we assess the effect of highest degree on departure and mobility intentions, it is interesting to observe that principals with doctoral degrees are less likely to plan leaving, albeit this finding is not statistically significant. It is possible that completing a doctoral program may enhance principals' ability to lead schools with sustained effort and vision, building their sense efficacy, leading to a longer career in education.

Our findings for school background characteristics suggest only urbanicity as significantly related to departure and mobility intentions, accounting for other characteristics. Counter to prevailing assumptions that suggest that urban school systems encounter workplace challenges that interfere with career longevity (including poor educational facilities, underqualified teachers, lack of parental support, student misbehavior, etc.) (Aaron, 2007; Gardiner, Canfield-Davis, & Anderson, 2009; Houle, 2006), urban school principals are less likely to plan leaving their positions than their suburban counterparts. There are two possible conjectures for this unexpected finding. First, despite difficult workplace conditions, urban centers may provide various opportunities for principals and their families that compensate for workplace challenges, including educational and employment opportunities for family members and cultural, recreational and political amenities (Glaeser, Kolko, & Saiz, 2000; Hall, 1998; Kim, 1995).

Second, urban school principals may be less likely to switch their current school because of their desire to make a difference by leading schools that are most in need. Indeed, researchers have suggested many individuals enter an administrative career with a desire to "make a difference in the lives of others" (Arthur et al., 2009; Pounder, 2001). In other words, urban principals may find a strong, compelling reason to provide service to the disproportionately minority and poor students attending urban schools (Shields, 2004; Bloom & Erlandson, 2003).

Findings further suggest that although rural school principals are more likely to plan leaving and changing schools in the bivariate random-intercepts regression models, rural principals are not any different in their

departure or mobility intentions from their suburban school counterparts, once the other characteristics are controlled for in the model. What these findings may suggest is that the school and the district characteristics included in the logit models moderate workplace challenges that previous research suggests are prevalent in rural school districts, including high district poverty, low principal salary, and inadequate professional development opportunities, among many others (Duncan & Lamborghini, 1994; Ingersoll, 2001; Monk, 2007). Once these characteristics are adjusted for, the attenuation of the rural effect in the school district model is expected.

Consistent with prior research (Ingersoll, 2001; Kelly, 2004; Kukla-Acevedo, 2009; Van Dick & Wagner, 2001) that found the association between negative work climate and undesirable organizational outcomes, in bivariate random-intercepts regression models, student behavioral challenges (i.e., measured by disciplinary-environment and learning-climate indexes) are associated with intentions of departure and mobility among principals. In the final logit models, however, disciplinary and learning climate are unrelated to departure intentions, although a negative learning climate and a higher disciplinary-problem context are related to principals' intentions of switching their current school. The dwindling effect of unfavorable learning and disciplinary climate in the final models suggest that by changing school context and workplace conditions that moderate these effects, we can reverse negative school climate.

Although research (Graham, 1997; Hertling, 2001; Yerkes & Guaglianone, 1998) and national reports (NAESP, 1998; Protheroe, 2008) present work-related stress among the major reasons why principals leave, results from the present study provide only limited support for this claim. For example, an hour increase to the principal's work load influences intentions to move only marginally (i.e., 1 percent), while it does not impact intentions to leave at all. We, however, caution that these findings do not necessarily mean that work overload is not a factor for principals' career longevity decisions. We suspect that the divergence between the present findings and those reported elsewhere result from the way the work overload variable we used in this study is constructed. By operationalizing workload by weekly hours on school activities reported by principals as opposed to the intensity of those activities, job overload's effect on career transitional intentions could have been undermined. In other words, the measures applied are unlikely to fully capture the various forms of stressors, including layering, challenging, and conflicting assignments, that principals assume every single day and that other researchers (Norton, 2003; Winter & Morgenthal, 2002) recognize will result in physical and emotional exhaustion, eventually creating the need for turnover.

Consistent with prior research (Baker, Punswick, & Belt, 2010; Currall, Towler, Judge, & Kohn, 2005; Jacobson, 1989; Papa, 2007; Vandenberghe & Tremblay, 2008), these data suggest an increase in salary is associated with

reduced intentions of mobility and departure over and beyond appropriate workplace conditions, job autonomy and satisfaction, and individual, school and district characteristics. Using salary as a way to reduce turnover is a very costly approach and is a difficult proposal under the current fiscal climate in many states and districts. Yet, what these findings suggest is that an approach that ignores financial incentives will make the task of attracting and retaining principals extremely difficult.

Lending credence to the existing body of knowledge that suggests positive relationships between decision latitude, job satisfaction, and career longevity (Kukla-Acevedo, 2009; Daly & Dee, 2006), principals' influences over supervisory decisions can reduce both intent to leave and move. Even when other conditions are constant, when principals' influence over spending, hiring teachers, teacher evaluations, and disciplinary policies are lost or greatly undermined, intentions to leave or move are expected.

As anticipated, the three measures of the job satisfaction (i.e., principals' belief that their job is worthy, their satisfaction with their district, and their enthusiasm with the principalship) significantly reduce departure and mobility intentions, even after controlling for individual, school, district, and workplace-condition characteristics. The importance of these characteristics for principals' departure and mobility plans underscores how educators' career transitional intentions are related to subjective interpretation of their work (Cooley & Shen, 1999).

Our models for the district context suggest two characteristics that are significantly related to principals' mobility intentions: required internship/trainings and region in which a principal works. We found that districts that mandate trainings and internships are more likely to reduce principals' intentions of switching to other schools than districts that do not enforce these requirements. Given that some principals describe frustration from role confusion among the major reasons why they leave their current schools, planned and deliberate internship and training opportunities may be necessary socialization experiences to cushion principals against role ambiguities and build the sense of efficacy necessary to successfully transition to an administrative role (Darling-Hammond, LaPointe, Meyerson, & Orr, 2007; DiPaola & Tschannen-Moran, 2003; Hess & Kelly, 2007; Portin, 1997; Goodwin, 2002; Robinson, Lloyd, & Rowe, 2008). These findings are particularly promising because internships and training opportunities are policy tools within the confines of district authorities to manipulate as they promote principal retention.

Finally, findings from the present study show that departure and mobility intentions depend on the geographic regions in which principals work. For example, principals in the South are more likely to plan leaving the principalship than their counterparts in the Northwest. We have not found previous research that indicates how regional variations impact educators' career longevity intentions. Nor do our data provide adequate explanations

for such differences. We, however, suspect that a constellation of work- and nonwork-related antecedents—over and beyond what our models predict—may contribute to the observed differences. Workplace antecedents may include regional differences in benefits, workplace policies, and pension plans (Farber & Newman, 1989) that may place a particular impact on principals' career mobility and departure intentions. Nonwork-related influence may include geographic differences in opportunities that influence career departure intentions. For example, we know from national reports that Southern regions have a disproportionate share of the US rural population (Tickamyer & Duncan, 1990), which is subject to high poverty linked to a limited opportunity structure. Many rural communities lack stable employment, provide limited recreational opportunities, and are socially and spatially isolated (Monk, 2007). If principal retention policies fail to compensate for such structural differences, principals' exodus to other regions is very likely.

SUMMARY AND CONCLUSIONS

Summary of the findings suggest two major trends. First, the study identifies characteristics that may commonly influence departure and mobility intentions, including several principal background characteristics (gender, age, and years of experience), some workplace condition factors (salary and supervision autonomy), and the job satisfaction, job enthusiasm, and job worthiness (emotional aspect of work) variables, as well as region of country as a construct.

Second, the study shows characteristics that are significantly related to mobility, but not departure intentions, including degrees of urbanicity, work-week hours, school disciplinary context, and professional development opportunities. This pattern may suggest that, in part, principals who intend to move may be influenced by a different set of factors than those who plan to leave. The characteristics that are related to mobility, but not to departure intentions, are largely school-context specific, and are not problems that principals perceive are inherent to the position (or the education field). When these context characteristics are in conflict with principals' goals/aspirations, principals intend to migrate to a different school setting, searching for what they consider to be better incentives or in anticipation of avoiding disincentives in their current school environment. In other words, as much as these context characteristics generate dissonance, pulling principals out of their current work environment, they are not potent enough to influence their decisions to leave their careers altogether.

In comparison, the characteristics that influence principals' career departure are more enduring in their effect. For example, consider job enthusiasm, job worthiness, and job satisfaction, which impact not only mobility

but also departure intentions. The reason why these characteristics are significant for departure intentions is because they are not directly mutable through traditional policy levers. When these affective or subjective facets of principals' work are compromised, or are incompatible with their values, not only is an intention to move real, but an intention to change one's career increases.

Implications for Practice

Intentions to leave or move are the last steps in the sequence of the withdrawal cognition, which leads an individual to actively seek leaving or moving (Mobley, 1977). If they occur, departure or mobility usually lead to outcomes typically seen as undesirable both to the principals and schools alike. Untimely departure or mobility adversely affect practicing principals by causing an interruption in their career, thereby inhibiting their ability to learn, mature, and grow in the profession. Equally, although schools and school systems may benefit when ineffective principals leave (Baker et al., 2010; Gates et al., 2003), turnover of proficient and skilled school leaders undermines the school's capacity to realize a sustainable and continuous growth and change process leading to successful implementation of educational programs and initiatives. To use Fink and Brayman's words, with untimely principal succession, school improvements become "a set of bobbing corks, with many schools rising under one set of leaders, only to sink under the next" (2006, p. 62).

Implications from the present study generally support the organizational science literature that successful retention depends, among other things, on programs/models that draw an individual's desires, expectations, and interests into congruence with those of the school/school system (Maertz & Griffeth, 2004; Hom & Kinicki, 2001; Zavala, French, Zarkin, & Omachonu, 2002). Districts and states can create an alignment between the principals' values and the demands of their work by introducing effective models and programs to increase retention. For example, to the extent that increased autonomy over supervisory activities reduces both intent to leave and to move, districts can leverage retention by decentralizing key decisions to the school level including budget, spending, hiring teachers, etc., allowing principals to direct their focus and resources in a way that address their school needs and priorities. The broader implication of this finding is that redesigning the principalship to modify and remove those aspects of the work principals believe are "inhibiting/bureaucratic" is a necessary measure to increase job satisfaction and retention (Daly, 2009; Gawlik, 2008; Marks & Nance, 2007).

Our findings also suggest how changing the school climate serves as a key leveraging point to improve retention. Given that a nonconducive school climate (characterized by a high intensity of student discipline problems)

increases principals' intent to move to another school, programs and models that reduce student behavioral challenges will improve not only student engagement and learning, but also reduce principal exodus to other systems. Although an argument can be made that principals themselves are responsible for building a positive school climate, the complex nature of student discipline problems requires solutions that involve other key stakeholders, particularly the school district. For example, when districts develop effective discipline policy, initiate innovative programs and models (such as positive behavior intervention systems), and provide adequate staff to schools such as counselors, mentors, and social workers, student behavioral problems significantly decline (Astor, Benbenishty, & Meyer, 2004; Horner & Sugai, 2010).

Implications from our study suggest how professional development opportunities for principals serve as key leveraging points in the district's effort to improve retention. By engaging principals on mandatory (as opposed to random) professional development opportunities, our findings indicate that districts can improve not only principals' knowledge and skills, thus increasing competence and self-efficacy, but also foster their identity development in a manner that builds their commitment for a longer career in the profession.

Further, our findings suggest that a specific set of strategies are necessary to addresses the career transitional intentions of special groups of principals due to the unique nature of work-related challenges encountered by these principals. For example, in light of higher career-longevity intentions of minority principals in majority non-White schools found in the present study, and minority principals' identity and commitment to serve non-White students reported in previous research (Bloom & Erlandson, 2003; Dillard, 1995; Lomotey, 1987, 1993; Siddle-Walker, 1993), the assignment of minority principals in majority non-White schools might be a viable policy lever for the retention of minority principals.

Yet, it is important to recognize that principals may feel that their careers have "plateaued" if the strategies provided by districts and states are restricted just to improve the demands of the work, with no or few incentives attached to increase their prospects for promotion and advancement. In other words, if capable principals are not rewarded financially, and if other growth opportunities are lacking, our results suggest a substantial increase in departure. In short, ignoring an individual's wants and desires by putting undue emphasis on organizational role expectations equals ignoring the symbiotic relationship between the two—the heart of successful retention.

Research Implications

Prior succession research (e.g. Allen, 2004; Riehl & Byrd, 1997) leans more heavily on career transitional intentions as a function of individual

attributes, predisposition, and personality, and less as a function of institutional/organizational processes. Attributing principal's succession intentions to individual characteristics, however, limits our ability to recommend institutional policies and practices useful in the unpacking of the departure-mobility puzzle. In order to bridge this gap in the literature, we used Hierarchical Generalized Linear Models (HGLM) to capture district- and school-context characteristics that may influence career departure and mobility intentions, while accounting for individual-level characteristics. In applying HGLM we have accomplished three primary objectives important for principals, schools, and districts. First, we specify the variance in principal departure and mobility attributed to individual-, school-, and district-level differences, allowing for more appropriate determinations of policy and practically relevant solutions. This hierarchically structured modeling approach allows for the estimation and structuring of models that best mimic reality.

Second, the analyses have identified school and district characteristics associated with departure and mobility intentions that may be malleable through development and implementation of appropriate policy interventions that increase principal retention. Third, the approach allowed us to parse out demographic characteristics (such as gender, race, and highest degree) relevant for principals' career departure or mobility intentions over and beyond district and school characteristics. The fact that several demographic characteristic still remain significant even after accounting for district and school characteristics supports our preceding assumption—that the integration of individual needs and attributes on the one hand with the institutional characteristics, demands, and expectations on the other is key for the succession process.

NOTES

1. We noted that these data analyses do not fully consider the effects of characteristics at the state level, largely because we were concerned with those characteristics at the school and district levels that can be most influenced through district- and school-level policies or practices. While we did not study a significant number of state-level characteristics, we did capture state-level variations using a state variable as a clustering variable, as well as region of country. Consequently, we have generated more accurate estimates of the characteristics we do include in modeling at the level 1 principal/school context and level 2 district context. In addition to the available data for principals' background characteristics and the schools these principals work in, data are also available on the school districts where schools are clustered. The SASS database does not contain state-level characteristics that might influence the outcome variables. In the context of this study, state-level differences in public school principal mobility and departure intentions could be influenced by a number of characteristics, including between- and within-state differences in school funding policies and practices or differences between states in unionization policies (Hale & Moorman, 2003; Gates et al., 2003). While we include variables that capture unionization differences, we acknowledge that these unionization policies are school specific within a state rather than state specific. An additional characteristic we do not examine due to data limitations in availability at the state-level is differences in statewide school funding policies.

2. While various statisticians have developed a number of methods for estimating parameters in multilevel models, most of the techniques use one form of any Maximum Likelihood Estimation method (Rabe-Hesketh & Skrondal, 2008; Raudenbush & Bryk, 2002). For a thorough evaluation of the different estimation methods that can be applied in the context of generalized linear mixed models, examine an article called "Reliable estimation of generalized linear mixed models using adaptive quadrature" (Rabe-Hesketh, Skrondal, & Pickles, 2002). While marginal maximum likelihood has a closed form in the general linear mixed model, the same condition does not exist within the generalized linear mixed modeling framework, thus requiring the use of approximate numerical integration methods that can take considerable time to converge to a solution (Rabe-Hesketh & Skrondal, 2008). Employing the *xtmelogit* command, a new built-in command introduced in Stata 10 that estimates random intercept and random coefficient models as well as other models with hierarchically structured data, we used Laplacian and 7-point Adaptive Gauss-Hermite quadrature in the estimation of models used in the model-building phase.

3. Using guidelines presented in Rabe-Hesketh & Skrondal (2008), we tested the use of 7 integration points in Adaptive Gauss-Hermite quadrature estimation. We then added additional quadrature points until the estimates became relatively stable, particularly for variance estimates of the random effects. The stability of the estimates called for at least 12 integration points but we settled on 15 points for additional confidence in estimates.

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