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America's Public School Kindergarten Teachers' Job Turnover and Associated Factors*

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Abstract

This study examined the effects of teacher characteristics, perceived school climate and work conditions, and students' characteristics on public school kindergarten teachers' act of moving to another school, leaving the profession and staying in the same school. The data came from School and Staffing Survey (SASS) and the Teacher Follow-up Survey (TFS) collected in the United States. The findings showed that teachers' demographic and professional characteristics were stronger predictors of mobility decisions than perceived school climate and working conditions, and characteristics of students. It underlined the importance of understanding the sources of turnover for subgroups of teachers and identifying movers and leavers when studying the turnover.

Key Words

Kindergarten Teachers, Teacher Turnover, SASS, TFS.

In general, teacher turnover is an umbrella term used to indicate teachers who leave the teaching profession or move to another school (Boe, Cook, & Sunderland, 2008). There has been a dramatic increase in the percent of teachers who either left the profession (leavers) or transferred to another school (movers) in recent years. According to the National Commission on Teaching and America's Future (NCTAF; Barnes, Crowe, & Schaffer, 2007), in the past 15 years, the teacher attrition rate has grown by 50%, and the teacher turnover rate has risen to approximately 17% across the United States. The estimated cost of teacher turnover in public schools is over $7.3 billion a year. In addition to budget costs, teacher turnover is associated with lower student achievement, and with lower teacher and program quality, particularly in high-poverty and low-performing schools (Barnes et al.). Early childhood teachers who plan to remain in the profession for more than five years provide significantly higher quality programs than those who plan to remain for fewer years (Midwest Child Care Research Consortium, 2009).

Researchers have often examined specific groups of teachers such as music teachers (e.g., Mclain, 2005), English teachers (e.g., Hahs-Vaughn & Scherff, 2008), mathematics and science teachers (e.g., Henke, Zahn, & Carroll, 2001), special education teachers (e.g., Beck & Gargiulo, 1983; Gersten, Keating, Yovanoff, & Harniss, 2001), secondary school teachers (e.g., López et al., 2008), elementary school teachers (e.g., Bogler, 2002; Perrachione, Rosser, & Petersen, 2008; Viel-Ruma, Houchins, Jolivette, & Benson, 2010; Weiqi, 2007), and middle and high school teachers (e.g., Schwab & Iwanicki, 1982). Researchers have usually treated kindergarten teachers within a broad group of teachers at

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the elementary level (e.g., Perrachione et al.; Viel-Ruma et al.), although elementary school grades cover almost a seven-grade range (prekindergarten through fifth grade). However, kindergarten teachers may have different rates of staying, leaving the profession, or moving to another school, compared to higher elementary grade teachers (Keigher, 2010; Klassen & Chiu, 2010). Differences in kindergarten teachers' turnover rates and the associated factors with their turnover have been neglected. The purpose of this study is to explore factors contributing to public school kindergarten teachers' job turnover.

Predictors of Teacher Turnover

Research has shown that teacher characteristics, work conditions and school climate, and student characteristics have been linked to teacher turnover. Teacher characteristics such as gender, race, age, certification, educational level and years of teaching experience have been associated with teachers' decision to stay in the same school, move to another school, or leave the profession. Studies have reported that attrition rate is higher for female teachers than for male teachers (e.g., Guarino, Santibanez, & Daley, 2006), for Black and Hispanic teachers than for White teachers (Keigher, 2010; Strunk & Robinson, 2006), for teachers with a probationary teaching certificate than for those with a regular certification (Strunk & Robinson), and for teachers with a graduate degree than for those with a bachelors' degree (Borman & Dowling, 2008). The relationships between leaving the job and teachers' age and years of experience are U-shaped, with higher turnover rates among younger and older teachers and among new teachers and senior teachers, and lower turnover rates for mid-aged and mid-career teachers (Keigher, 2010; Liu, 2006; Strunk & Robinson).

Studies examining the relationship between the teacher turnover and characteristics of school climate have shown that teacher turnover is higher when teachers have adverse working conditions (Loeb, Darling-Hammond, & Luczak, 2005; Kukla-Acevedo, 2009). Teachers who perceive that they have more influence on school policy (Liu, 2006), more autonomy over their classroom (e.g., Dauksas & White, 2010; Renzulli, Parrott, & Beattie, 2011), good collegial relationship and administrative support are more likely to remain in teaching (e.g., Dauksas & White; Renzulli et al.). Teachers with low salary are more likely to leave the profession (Imazeki, 2005; Loeb et al.; Kukla-Acevedo; Ondrich, Pas, & Yinger, 2008). Teacher turnover is greater in high-poverty, and high-minority schools (Loeb et al.; Strunk & Robinson, 2006). Poor student behaviors are also associated with an increased likelihood of leaving the profession for teachers. Indeed, Kelly (2004) found that poor student behaviors and teachers' individual characteristics have a greater influence on the attrition than school characteristics and salary.

Teachers' job satisfaction and burnout has been associated with teacher turnover (Liu & Ramsey, 2008; McCarthy, Lambert, Crowe, & McCarthy, 2010; Weiqi, 2007). Teachers with lower job satisfaction have a higher likelihood of planning for (McCarthy et al., 2010) and actually leaving the profession (Liu & Ramsey; Weiqi). According to the School and Staffing Survey, 25% of the teachers across the United States left teaching because they were dissatisfied with their job, and another 25% left the profession with a desire to pursue a better job or career (Ingersoll, 2003).

Present Study

In general, teacher attrition or turnover has not been differentiated for leavers and movers when teacher characteristics, perceived school climate and work conditions, and student characteristics were explored. A most recent and relevant study by Kukla-Acevedo (2009) differentiated movers and leavers for general teacher population and found differences between the movers and leavers by teachers' demographic characteristics and their perceptions about the general school climate. Yet, as to the author's knowledge, no single study has examined how those teacher, school, and student characteristics play a role in kindergarten teachers' act of moving to another school or leaving the profession. Thus, this study contributes to the literature by portraying the predictive power of teacher-, school- and student-level factors in estimating turnover rates for movers and leavers.

In addition, to date, the majority of research has included teachers "in general" or teachers in a specialized field (e.g., music, English subject, and special education). Although public school kindergarten classrooms would look like upper elementary grade classrooms (e.g., Pianta et al., 2005) because they are housed by the public school system, challenges facing kindergarten teachers and upper grade elementary school teachers are probably different in a number of ways. First, the developmen-

tal stages of students in kindergarten are different from those of older students, because younger children have difficulty, for example, taking others' perspectives, sharing, sitting still, and following directions. The second, kindergarten is challenging because students in kindergarten are experiencing the transition to formal schooling. Using a nationally representative sample, parents reported one or more adjustment difficulties for 28% of children in kindergarten, characterized by reluctance to go to school (Hausken & Rathbun, 2002). In another study kindergarten teachers reported that 48% of children experienced moderate to serious difficulty in transitioning to kindergarten (Rimm-Kaufman, Pianta, & Cox, 2000). The third, many kindergarten programs are embedded in K-5 or K-12, and upper grades may be a priority over kindergarten for school administrators because of the accountability pressure put on upper grades. Parallel with the latest challenge, indeed, the shift in kindergarten curriculum has changed and that has increased expectations from teachers which may create tension and challenges (Brown, 2011; Egertson, 2004; French, 2004; Geist & Baum, 2005). Despite the changes in kindergarten curriculum, along with the increased accountability that puts some strains on teachers, there is a gap left in the literature regarding the association between teacher characteristics, perceived school climate and student characteristics of school and turnover for teachers who primarily teach kindergarten in public schools in which prekindergarten/kindergarten through upper elementary grades were offered.

Specifically, this study sought to answer the following research question: What is the relationship between teachers' turnover (act of moving to another school, leaving the profession or staying in the same school) and teacher characteristics, teachers' perceived school climate and working conditions, and student characteristics of the school for public school kindergarten teachers? Selected teacher variables included gender, race, age, educational level, years of experience and certification. Perceived school climate and working conditions included administrative support, colleague support, influences on school policy, autonomy over classroom, satisfaction with salary, satisfaction with job, and job burnout. Student characteristics included student quality, and percent of students from racial minority group and percent of students who participated in a free or reduced price lunch program (FRPL). Turnover was differentiated for teachers moving to another school and for those leaving the profession altogether, because it could be expected that teacher characteristics, perceived school climate and working conditions and student characteristics would be associated with those two components in different magnitudes and directions. In addition, teachers who left the profession involuntarily for reasons such as staff actions were excluded because that essentially represents another phenomenon.

Method

Data Overview

The data for this study came from the School and Staffing Survey (SASS) and its component, Teacher Follow-up Survey (TFS). SASS includes data on teachers' perceptions about school climate, teachers' background information, characteristics of the students, and problems in their schools. TFS data is collected in the year following SASS administration in order to determine how many teachers remained at the same school, moved to another school, or left the profession and to gather data about the perceptions and characteristics of their current and previous jobs. The National Center for Education Statistics (NCES) has conducted the SASS and TFS six times so far, beginning with the 1987-1988 school year (Tourkin et al., 2007). This study used data from the 2003-2004 SASS and 2004-2005 TFS.

Using a stratified probability sample design, the 2003-2004 SASS sampling procedure included sampling the schools first, utilizing the 2001-2002 Common Core of Data school file, which included all elementary and secondary schools in the United States. Excluded from the SASS sample were schools operated by the Department of Defense or schools that offered only kindergarten, prekindergarten or adult education. Then, teachers, principals and media specialists were sampled. Teachers completed the teacher questionnaires. The overall teacher response rate was 84%. Among 53,188 public school teachers sampled, approximately 43,000 public school teachers were included in the final 2003-004 SASS data.

Study Sample

The study sample consisted of public school teachers, who were regular full-time kindergarten teachers instructing in self-contained classes with an organization assignment of general early childhood/prekindergarten or elementary grades. Excluded were teachers who worked in private schools, those who taught a grade other than kindergarten, and

those who instructed several classes of different students, selected students from regular classes, or specific subject areas. There were approximately 1,280 (rounded per NCES data requirement) teachers who taught kindergarten self-contained classrooms in public schools. Among 1,280 kindergarten teachers, approximately 210 (weighted N= 37,795) were followed-up in the next year, composing the study sample. Forty-six percent of the study sample was stayers, 31.2% movers, and 22.8% leavers.

The characteristics of the follow-up sample are presented in Table 1. The sample was predominantly female and White. The majority of the teachers was younger than 60 years old, held a regular, state, or advanced certification, and had four or more years of experience.

Table 1.

The Characteristics of the Base Year and Follow-up Sample

	N	%
Unweighted	~210	
Weighted	37,795	
Female	36,399	96.3
Male	1,396	3.7
White	27,134	71.8
Black	3,816	10.1
Hispanic	5,870	15.5
Other Race	974	2.6
Younger than 30 years old	7,604	20.1
30 to 39 years old	9,930	26.3
40 to 49 years old	10,706	28.3
50 to 59 years old	7,997	21.2
60 years old or older	1,558	4.1
BS degree	24,269	64.2
Advanced degree	13,526	35.8
No certificate	220	0.6
Regular/Standard/Advanced certificate	30,857	81.6
Probationary certificate	2,921	7.7
Other (temporary/waiver etc) certificate	3,797	10.0
3 or fewer years of teaching experience	9,839	26.0
4 to 10 years of teaching experience	9,729	25.7
11 or more years of teaching experience	18,228	48.2

Scale Construction

In general, job satisfaction or burnout studies have used instruments specifically developed to measure job satisfaction and associated factors. Although no specific instrument was used in the SASS data set, questions were comprehensive and structured well to capture broad aspects of job satisfaction and burnout, as well as school environment and teachers' perceptions about school and work conditions. A challenge, though, was to construct measures that would capture the variables of interest for the study.

Numbers of studies have used the SASS data set to study job satisfaction, teacher turnover, and associated factors. The general approach used by those studies was to create scaled constructs using the items that appear to measure the same or similar aspects (e.g., Kukla-Acevedo, 2009; Renzulli et al., 2011) or applying a factor analysis method (e.g., Gardner, 2010; Liu & Ramsey, 2008). This study used both factor analyses and scale procedure to create constructs that measured the variables of interests. First, preliminary item analyses on possible scale items were conducted. Factor analyses using principal axis factoring were run. A direct oblimin with Kaiser Normalization procedure was applied. Items with .40 or higher factor loadings were maintained and internal consistency measures were obtained. Then, the scales were created with the items that loaded on the factors. Table 2 presents factor loadings, Cronbach's alpha, and descriptives for the items and scales.

Table 2.

Descriptive Statistics and Factor Loadings for Dimensions

Dimension and Items
Job satisfaction Internal consistency α=83; higher score shows the greater job satisfaction.
1. I am generally satisfied with being a teacher at this school (1=SD, 4=SA)
2. I would describe us [teachers at this school] as a satisfied group (1=SD, 4=SA)
3. I like the way things are run at this school (1=SD, 4=SA)
4. I think about transferring to another school (1=SA, 4=SD)
Burnout Internal consistency α=.75; 1=SD, 4=SA; higher score shows the higher level of burnout.
1. I sometimes feel it is a waste of time to try to do my best as a teacher
2. If I could get a higher paying job I'd leave teaching as soon as possible
3. I don't seem to have as much enthusiasm now as I did when I began teaching
4. I think about staying home from school because I'm just too tired to go
5. Stress and disappointments involved in teaching at this school aren't really worth it
Administrative Support Internal consistency α=.85; 1=SD, 4=SA; higher score shows the greater support.

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
4. The principal knows what kind of school he wants and has communicated it to staff
5. In this school, staff members are recognized for a job well done
Colleague Support Internal Consistency α=.78; 1=SD, 4=SA; higher score shows the greater support.
1. Rules for student behavior are consistently enforced by teachers in this school
2. Most of my colleagues share my beliefs and values about school mission
3. There is a great deal of cooperative effort among the staff members
Professional Support
Internal consistency α=.52; higher scores show more support.
1. I receive a great deal of support from parents for the work (1=SD, 4=SA)
2. Necessary materials are available as needed by the staff (1=SD, 4=SA)
3. I am given support I need to teach students with special needs (1=SD, 4=SA)
Interference Internal consistency α=.52; 1=SD, 4=SA; higher scores show more interference.
1. The level of student misbehavior interferes with teaching (1=SD, 4=SA)
2. Routine duties and paperwork interfere with my job of teaching (1=SD, 4=SA)
3. Amount of student tardiness and class cutting interferes with teaching (1=SD, 4=SA)
Influence on global school policy Internal consistency α=.73; 1=no influence, 4=a great deal of influence; higher score shows the greater administrative influence
1. Influence on determining the content of in-service professional development
2. Influence on evaluating teachers
3. Influence on hiring new full-time teachers
4. Influence setting discipline policy
5. Influence on deciding how the school budget will be spent
Influence on school's curriculum-related decisions Internal consistency α=.74; 1=no influence/control, 4=a great deal of influence/control; higher score shows a greater curricular autonomy.
1. Influence on setting performance standards for students at this school
2. Influence on establishing curriculum
3. Control over selecting textbooks and other instructional materials in own classroom
4. Control over selecting content, topics and skills to be taught in own classroom
Classroom autonomy Internal consistency α=.79; 1=no control, 4=a great deal of control; higher score shows greater classroom autonomy.
1. Control over selecting teaching techniques in own classroom
2. Control over evaluating and grading students in own classroom
3. Control over disciplining students in own classroom
4. Control over determining the amount of homework in own classroom
Student Quality
Internal consistency α=89; 1=serious problem, 4=not a problem; higher score shows a higher student quality.
1. Student tardiness
2. Student absenteeism
3. Student apathy
4. Lack of parental involvement
5. Poverty
6. Students come to school unprepared to learn
7. Poor student health

Notes: SD= Strongly Disagree, SA= Strongly Agree.

Dependent Variable

Kindergarten teachers' job status in the follow-up year was the variable of interest. Four levels of teacher's job status in 2004-05 were obtained from current and former TFS: whether (1) the teacher was teaching at the same school (stayer), (2) teaching at a different school (mover), (3) left profession voluntarily (leaver), or (4) left profession or switched school involuntarily. Teachers who reported that their reason for leaving the job or school was school staff action (e.g. layoff, school closing etc.) were considered in the last group and were excluded from the analyses. Teachers who stayed in the same school were used as a reference group in the analyses.

Independent Variables

Teacher Characteristics:

Teachers' Race and Gender: Two questions asking whether the teacher was of Hispanic or Latino origin (*T0409*) and whether the teacher was White (*T0410*), Black or African-American (*T0411*), Asian (*T0412*), Native Hawaiian or Other Pacific Islander (*T0413*), or American Indian or Alaska Native (*T0414*) were used to create four race/ethnicity categories: (1)White, non-Hispanic, (2) Black, non-Hispanic, (3) Hispanic, (4) Other

(Asian, Pacific Islander, American Indian and Native Alaskan). A dummy variable was created for each race/ethnicity. Teachers' gender was obtained from the variable *T0408*, asking whether the teacher was male or female. Female teachers were the reference category.

Teachers' Age: Four categories for teachers' age were created using the variable *AGE_T*: Younger than 30 years old, 30-39 years old, 40-49 years old, 50-59 years old, and 60 years or older. The category of younger than 30 years old was used as a reference group.

Highest Level of Education: The SASS teacher questionnaire included questions regarding whether teachers had a bachelor's degree (*T0116*), a vocational certificate (*T0128*), an associate's degree (*T0130*), a master's degree (*T0123*), an educational specialist degree (*T0138*), a certificate of advanced graduate studies (*T0140*), or a doctorate or professional degree (e.g., Ph.D., Ed.D., etc; *T0142*). There were no teachers in the sample who had a degree lower than a bachelor's degree. A dummy variable was derived from those variables as bachelor's degree=0 and advanced degree=1, which included master's degree, educational specialist degree, certificate of advanced graduate studies, and doctorate or professional degree.

Total Years of Experience: The NCES staff created a variable measuring the total years of teaching experience in public and private schools (*TOTEXPER).* Three categories were created: Three or fewer years of experience, 4-10 years of experience, and 11 or more years of experience. Three or fewer years of experience was used as a reference group.

Certification: A question was asked to teachers "*which of the following describes the teaching certificate you currently hold in this state?*" (*T0166*). The response categories were "regular or standard state certificate or advanced professional certificate," "probationary certificate," "provisional or alternative certification program," "temporary certificate," "waiver or emergency certificate," and "no certificate." Four categories were included in the analyses: (1) no certificate, (2) regular, state, or professional types of certificates, (3) probationary certificate, (4) Other certificate (provisional or alternative certification program, temporary certificate and waiver or emergency certificate). Regular, state, or professional types of certifications category was used as a reference category in the analyses.

Teachers' Job Satisfaction and Burnout: The questions which asked *to what extent do you agree or disagree with the following statements?* about teaching in general and teaching in the school specifically (variables *T0349*, *T0350* and *T0375* through *T0381*) were used to construct the job satisfaction and burnout scale. Teachers rated their agreement on a 4-point likert scale; 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree.

As shown in the first panel of Table 2, the job satisfaction scale was loaded by four items (*T0350, T0376, T0377,* and *T0379*). Items were coded so that the higher scores represent a higher level of satisfaction. Cronbach's α was .83.

Although researchers have acknowledged that burnout is a multidimensional construct (e.g., Maslach, 1993), it is sometimes more convenient (Brenninkmeijer & Van Yperens, 2003) or more accurate (Betoret, 2009) to treat burnout as a unidimensional construct. In this study it was more convenient to consider burnout as a unidimensional construct because, (1) there was a limited number of questions to measure several aspects of burnout; (2) no burnout instrument was included in the questionnaires; and (3) empirically, factor analyses yielded loading only one factor. The second panel of Table 2 shows the results for the burnout scale. The burnout scale was loaded by five items (*T0349, T0378, T0380, T0381,* and *T0375*). Those items appeared to be similar with dimensions of the burnout scale developed by Maslach. Cronbach's α was .75. The higher score represented a higher level of burnout.

Teachers' Perceptions about School Climate: Seven factors related to school climate were obtained: four support-related factors were administrative support, colleague support, professional support and interference with teaching, and three influence- and control-related factors were influence on school's global policy, influence on school's curriculum policy, and classroom autonomy. In addition, satisfaction with salary was included as variables related to school climate.

Support-related Factors: Teachers were asked *to what extent they agreed or disagreed* on a given statements about the school climate (variables *T0330* through *T0348*). They rated their agreement on a 4-point likert scale; 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree. Factor analyses yielded four aspects of school climate: (1) administrative support (five items: *T0330, T0331, T0337, T0340*, and *T0342*, Cronbach's α=.85); (2) colleague support (three items: *T0338, T0339*, and

T0341, Cronbach's α=.78); (3) interference with teaching (three items: *T0333, T0336,* and *T0348*; Cronbach's α=.52); and (4) professional support (three items: *T0334, T0335,* and *T0346*; Cronbach's α=.52). Items were reverse coded so that the higher scores represent greater support and greater interference with teaching (See Table 2). The low alpha levels produced by interference with teaching and professional support items were unacceptable (George & Mallery, 2003), thus those two scales were not included in the turnover analyses.

Influence- and control-related factors: Teachers were asked "*how much actual influence do you think teachers have over school policy at this school in each of the following areas?*" Teachers rated their perceived influence of teachers over the school policy on a 4-point likert scale; 1=no influence, 2=minor influence, 3=moderate influence, and 4=a great deal of influence (variables *T0311* through *T0317*). Teachers also rated a set of statements in response to the prompt "*how much actual control do you have in your classroom at this school over the following areas of your planning and teaching?"* (variables *T0318* through *T0323*) on a 4-point scale; 1=no control, 2=minor control, 3=moderate control, and 4=a great deal of control. Although those two prompts seemed to be worded differently, the statements in each set were closely related. For example, the influence of teachers on the school policy regarding "establishing curriculum (*T0314*)" is related to the teachers' control over their classroom regarding "selecting textbooks and other instructional materials (*T0318*)" and "selecting content, topics, and skills to be taught (*T0319*)." Thus, factor analyses were run including these two sets of questions simultaneously.

As presented in Table 2, three factors were loaded: (1) influence on global school policy (e.g., personnel hiring and evaluation; five items: *T0313, T0314, T0315, T0316,* and *T0317*, Cronbach's α=.73); (2) influence and autonomy on curricular decisions (four items: *T0311, T0312, T0318,* and *T0319*, Cronbach's α=.74); and (3) autonomy in own classroom (four items: *T0320, T0321, T0322,* and *T0323*, Cronbach's α=.79). Items were reverse coded so that the higher scores represent greater influence on school policy and autonomy in classroom.

Satisfaction with salary: Teachers rated whether they were satisfied with their salary (*T0332*) on a 4-point likert scale as 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree. A dummy variable was created by collapsing the first and second category as "satisfied" (=1), and third and fourth category as "dissatisfied" (=0). Whether teachers were satisfied with their salary, instead of their actual income, was used, because household characteristics and whether the teacher lived in an urbanized or rural area or big or small town are the determinants of whether a certain amount would be sufficient to live. In addition, it was hypothesized that satisfaction with the salary would be more influential than the actual amount on teachers' decisions about their jobs.

Factors related to Students at the School: Student quality, percent of minority students (e.g., school-minority) at the school, and percent of students participating in free or reduced price lunch program (e.g., school-poverty) were the factors in this group. School-minority and school-poverty variables were obtained from *MINENR* and *NSLAPP_S* variables, respectively.

The student quality scale, as shown on Table 2, was loaded by seven (*T0364, T0365, T0370, T0371, T0372, T0373,* and *T0374*) of the eleven items, which included teachers rating of *"to what extent is each of the following a problem in this school."* The response categories were 1=serious problem. 2=moderate problem, 3=minor problem, and 4=not a problem. The higher score reflected a higher student quality. The Cronbach's α was .89.

Data Analyses

Data analyses started with providing descriptive statistics for the dependent and independent variables. Bivariate correlations were also computed for the scaled variables. Inferential analyses included multinomial logistic regression to estimate the predictors for turnover.

The SASS data set used a stratified probability sample design. Such complex designs require an adjustment called "weighting" to obtain a sample that is representative of the population from which the sample is drawn. Thus, a weighting procedure was applied to the descriptive and inferential analyses using a weight variable (*TFNLWGT*).

Results

Descriptive results for each independent variable are presented in Table 3. The first two pairs of columns in Table 3 show the means and standard deviations and the rest shows the bivariate correlation coefficients. On average, the study sample had relatively high job satisfaction and relatively low level of burnout. The scale scores for administrative

Table 3.

Descriptive Statistics and Correlations for the Scaled Variables

			Correlations							
	M	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Job satisfaction	12.46	2.65	-							
2. Burnout	8.93	3.02	-0.67	-						
3. Influence on global school policy	9.98	2.92	0.26	-0.22	-					
4. Classroom autonomy	10.35	2.84	0.44	-0.32	0.43	-				
5. Influence /autonomy on curriculum	14.05	2.06	0.35	-0.28	0.12	0.43	-			
6. Administrative support	17.11	3.12	0.60	-0.50	0.37	0.24	0.11	-		
7. Colleague support	9.88	1.94	0.41	-0.33	0.32	0.22	0.04	0.53	-	
8. Student quality	18.43	4.99	0.50	-0.36	0.06	0.29	0.20	0.20	0.27	-

Note. All correlations are significant at α =0.01 level

support, colleague support, classroom autonomy, and curriculum autonomy were close to the higher end of the scales and the scores on the influence on global school policy was around the mid scores of the scale. Approximately 20.5% of the teachers worked at schools where 75% or more of students were from racial minority groups, and 20.5% of the teachers worked at schools where 75% or more of students participated in a free or reduced price lunch program.

Based on the correlation coefficients among the scaled variables shown on Table 3, job satisfaction and burnout were negatively, but highly, correlated (r=-.67). Better school climate, and higher quality of students were correlated with a higher level of job satisfaction and a lower level of burnout. Administrative support, colleague support, influence on school policy, and autonomy over classroom were positively and moderately correlated with each other. In addition, these school climate variables were positively correlated with student quality. Although the correlations between influence on school policy and student quality and between autonomy on curriculum and colleague support were statistically significant, the correlation coefficients were very small.

Predicting Moving to another School and Leaving the Profession

A multinomial logistic regression was applied to the study sample to look at the differences among three groups of teachers: those who continued teaching in the same school, those who remained in teaching but had moved to another school, and those who had left teaching. The reference group was teachers who continued teaching in the same school, and probabilities were estimated for teachers who had moved to another school and those who had left teaching.

Results of the multinomial logistic regression are presented in Table 4. The model explained 60% of the variance in teachers' turnover (Nagelkerke R^2=.599). Teachers' individual characteristics accounted for 46% of the variance, perceptions about school climate, including job satisfaction and burnout, accounted for 11% of the variance, and student characteristics accounted for 3% of the variance.

Moving to another school

As presented in the first two columns of Table 4, male teachers were more likely to move to another school and less likely to leave the profession compared to female teachers. Black teachers and teachers in the other race category were more likely and Hispanic teachers were less likely than White teachers to move to another school.

The probability of moving to another school was lower for teachers whose ages were between 30 and 39 years old and for teachers who were 50 years old or older and it was higher for teachers whose ages were between 40 and 49 years older than for teachers who were younger than 30 years of age. Teachers with four to ten years of experience were more likely and teachers with more than ten years of experience were less likely than teachers with three or fewer years of experience to move to another school. Teachers with an advanced degree were about two times more likely than teachers with bachelors' degree to move to another school. Teachers who had no certifications had a higher likelihood and teachers with a probationary certification had a lower likelihood of moving to another school, compared to teachers with a regular, state, or advanced certification.

Table 4.

Predictors of Moving to Another School and Leaving the Profession for the Follow-up Sample

	Mover				Leaver			
	B	**SE**	**Wald**	**Exp**	**B**	**SE**	**Wald**	**Exp**
Intercept	6.61***	0.28	565.70		1.83***	0.28	41.86	
Teacher Characteristics								
Male	0.43**	0.14	9.54	1.53	-2.04***	0.18	135.57	0.13
White=Reference Group								
Black	3.29***	0.09	1467.98	26.84	3.33***	0.07	2031.16	27.91
Hispanic	-1.50***	0.09	308.54	0.22	-4.59***	0.17	704.68	0.01
Other	2.31***	0.09	599.05	10.07	1.02***	0.13	56.63	2.76
Younger than 30 Years Old=Reference Group								
30-39 years old	-0.24***	0.07	12.91	0.79	-2.19***	0.10	485.10	0.11
40- 49 years old	1.01***	0.08	158.75	2.75	-2.02***	0.11	327.36	0.13
50 to 59 years old	-0.83***	0.10	75.64	0.44	-1.15***	0.11	115.75	0.32
60 years old or older	-24.21***	0.00	.	0.00	-0.39***	0.12	10.33	0.68
Bachelors S degree=Reference Group								
Advanced Degree	0.64***	0.05	145.60	1.90	-0.15***	0.05	10.57	0.86
3 or Fewer Years of Experience=Reference Group								
4-10 years of experience	0.37***	0.06	37.84	1.44	0.98***	0.09	119.50	2.66
11 or more years of experience	-1.71***	0.07	529.43	0.18	2.39***	0.11	481.22	10.88
Standard or Regular Certification=Reference Group								
No Certification	0.48*	0.21	5.04	1.62	2.89***	0.19	241.63	18.00
Probationary certification	-0.74***	0.09	61.87	0.48	2.81***	0.10	808.83	16.66
Other certification	-0.10	0.08	1.53	0.91	-0.50***	0.11	20.92	0.61
School Climate								
Influence on global school policy	0.02*	0.01	5.70	1.02	0.15***	0.01	291.30	1.16
Classroom autonomy	-0.29***	0.01	796.41	0.75	-0.02*	0.01	4.05	0.98
Influence on curriculum	0.07***	0.01	40.27	1.08	-0.05***	0.01	18.48	0.95
Administrative support	-0.25***	0.01	788.41	0.78	-0.05***	0.01	24.09	0.95
Colleague support	0.22***	0.01	293.77	1.25	0.06***	0.01	20.09	1.06
Satisfied with salary	-0.44***	0.05	90.67	0.65	-0.40***	0.05	77.06	0.67
Job Satisfaction	-0.14***	0.01	145.25	0.87	-0.25***	0.01	311.50	0.78
Burnout	-0.10***	0.01	124.19	0.90	-0.05***	0.01	33.11	0.95
Student Characteristics								
Student Quality	-0.09***	0.00	329.09	0.91	-0.02**	0.00	9.38	0.98
75% or more minority	-0.59***	0.05	119.23	0.55	-1.26***	0.05	556.89	0.28
75% or more poor	1.27***	0.05	654.26	3.55	-0.04	0.05	0.72	0.96

Notes. * $p<.05$, ** $p<.01$, *** $p<.001$.

Greater colleague support, greater influence on school curriculum and global school policy were associated with an increased probability of moving, while greater autonomy over the classroom, greater administrative support, and satisfaction with salary were associated with a decrease in the probability of moving to another school. A lower level of satisfaction with job and a lower level of burnout were associated with an increased probability of moving to another school.

The probability of moving to another school was lower for teachers if the teachers worked at schools where 75% or more students were from racial minority groups, and higher for teachers if the teachers worked at schools which were participated in a free or reduced price lunch program. The odds of moving to another school were higher for a teacher if he/she worked at a school where 75% or more students were minority and if she/he worked at school where 75% or more students participated

in free or reduced price lunch program. Teachers were less likely to move to another school if they worked at schools with a higher quality of students.

Leaving the Profession

The last paired columns in Table 4 shows the multinomial logistic regression results for leaving the profession. Male kindergarten teachers were less likely to leave the profession compared to female kindergarten teachers. Black kindergarten teachers and kindergarten teachers from other race were more likely and Hispanic kindergarten teachers were less likely than White teachers to leave the profession. The odds of leaving the profession were lower for teachers who were 30 years old or older than for teachers who were younger than 30 years old. Likelihood of leaving the profession was higher for teachers with four or more years of teaching experience than for teachers with three or fewer years of teaching experience. Teachers with 11 or more years of experience were almost 11 times more likely to leave the profession than teachers with three or fewer years of teaching experience. Teachers with no certification and teachers with a probationary certification were more likely, and teachers with provisional, alternative, temporary, waiver, or emergency types of certifications were less likely to leave the profession, compared to teachers with regular, state, or advanced types of certifications. Teachers who had high job satisfaction and high burnout were less likely to leave the profession. Satisfaction with salary, greater classroom autonomy, greater influence on curriculum, higher classroom autonomy, and greater administrative support were associated with a decreased probability and greater influence on school policy and greater colleague support were associated with an increased probability of leaving the profession. Teachers who had high job satisfaction and high burnout were less likely to leave the profession. The likelihood of leaving the profession was higher for teachers who worked at schools with higher percent of minority students, and lower for teachers who worked with a higher quality of students, while school poverty was not associated with leaving the profession.

Discussion

The present study aimed to contribute to the literature that models the effects of teacher characteristics, perceived school climate and work conditions and students characteristics on teachers' mobility decisions. It built upon the prior research by examining the factors associated with kindergarten teachers' act of moving to another school or leaving the profession. The explored factors were teacher characteristics, which included teachers' gender, race, age, years of experience, educational degree and certification, perceived school climate and work conditions, which included administrative support, colleague support, influence on school policy, autonomy over classroom, satisfaction with salary, satisfaction with job and job burnout and student characteristics, which included student quality, school-minority and school-poverty compositions. Consistent with previous research (e.g., Keigher, 2010; Kukla-Acevedo, 2009; Liu, 2006; Liu & Ramsey, 2008; Loeb et al., 2005; Mau, Ellsworth, & Hawley, 2008; Strunk & Robinson, 2006), the findings of this study showed that teacher characteristics, perceived school climate and work conditions, and student characteristics are associated with moving to another school, leaving the profession, or remaining in the same school. However, the direction and magnitude of associations between the factors and outcome variables provided some differences for this sample, who were kindergarten teachers, from those reported in the general teacher turnover literature, as hypothesized. Key findings discussed with the light of previous literature are presented below for each category of selected factors.

Teacher Characteristics

Gender and Race: Male kindergarten teachers had higher probability of moving to another school and lower probability of leaving the profession, as opposed to previous studies (e.g., Guarino et al., 2006) which showed that attrition rate is lower for male teachers. Deviating from the existing literature (e.g., Keigher, 2010; Strunk & Robinson, 2006), which found that Black and Hispanic teachers had higher rate of turnover, this study suggested that Black teachers had higher but Hispanic teachers had lower probability of leaving the profession and moving to another school. Dissimilarities between this study and previous studies regarding the gender and racial/ethnic difference may stem from the specific group of teachers this study included, who were kindergarten teachers whereas previous research studied general teacher groups. Another reason may be how this study operationalized the turnover, differentiating the movers and leavers, while previous studies treated the turnover as a single action.

Age: Teachers' age showed a U-shaped relationship with leaving the profession and a ∩-shaped relationship with moving to another school, different from the literature (e.g., Allensworth, Ponisciak, & Mazzeo, 2009; Guarino et al., 2006; Keigher, 2010; Liu, 2006; Strunk & Robinson, 2006), which suggested a U-shaped pattern between teachers' age and teacher turnover. Based on these patterns produced by the data, it could be speculated that a U-shaped pattern of leaving the profession by age, considered along with a life cycle of an individual person, could be due to more personal-based reasons (e. g., child rearing, and retirement), while moving to another school could be due to professional reasons.

Years of Experience: Contradicting with the previous studies (e.g., Strunk & Robinson, 2006), indicating teacher attrition is higher during the early stages of the career, this study showed that teachers in their first three years of teaching were less likely to leave the profession compared to teachers with four or more years of experience. Years of experiences were linearly and positively associated with leaving the profession and showed a ∩-shaped association with moving to another school. A possible explanation for this different finding may be simply sample differences between this study, which included only kindergarten teachers, and other studies that included teachers in all levels of elementary education or upper grades. It may also be due to how turnover is defined in this study. That is, this study excluded teachers who involuntarily left the profession or moved to another school and included only those who chose to leave the profession. Previous studies ((e.g., Strunk & Robinson) included those whose employments were terminated by their employers, and as the researchers noted, "teachers are more likely to be fired in their first 2 to 3 years, before achieving tenure, which may account for a portion of the observed high odds ratio for teachers with 0 to 2 years of experience" (p. 92).

Certification: Teachers with a regular, state, or advanced certification were less likely to move to another school or to leave the profession, and thus were more likely to stay in the same school. This finding is in agreement with previous studies (e.g., Borman & Dowling, 2008; Strunk & Robinson, 2006). Additionally, the data for this study suggested that having a probationary certification decreased the probability of moving to another school and increased the probability of leaving the profession. It is possible that teachers on a probationary certification stay at the same school in order to complete their probationary certification, if they choose to remain in profession. It is also possible that they leave the profession if they were unsuccessful in completing the probationary term.

Education: Unlike the previous studies (Borman & Dowling, 2008; Strunk & Robinson, 2006), teachers with an advanced degree had lower likelihood of leaving the profession, and higher likelihood of moving to another school. It may be possible that teachers who pursue an advanced degree in teaching have more commitment in the profession, but look for better opportunities (e.g., higher salary or better benefits).

Perceived Work Conditions and School Climate

Perceived School Climate: Congruent with previous research (e.g., Kukla-Acevedo, 2009; Zhang & Zhu, 2010), in general, greater administrative support and classroom autonomy appeared to promote staying in the same school and negatively associated with leaving the profession and moving to another school. Contributing to existing research, these findings reveal that school leadership is an important source of teachers' decisions to stay in the school, or to leave the profession or move to another school. Teachers who perceive that they have legitimate administrative support have a higher probability of staying in the same school and profession.

On the other hand, disagreeing with the previous research (e.g., Liu, 2006), the findings showed that teacher turnover was higher among teachers who are involved in decision-making and who have good collegial relationships. A possible explanation may be that colleagues may be supporting each other in terms of following a career path that would make them happy. It may also be possible that teachers may think they would establish good relationships in the new schools or in whichever profession they choose when they leave.

Job Satisfaction and Burnout: Satisfaction with job and burnout were the significant predictors of leaving the profession or moving to another school. These findings are congruent with prior research (e.g., McCarthy et al., 2010). In agreement with the prior research (Liu & Ramsey, 2008; Weiqi, 2007), teachers with higher job satisfaction were less likely to leave the profession or move to another school. However, an unexpected finding was that the teachers with higher level of burnout were more likely to stay in the same school and less likely to leave the profession or move to another

school. In light of this finding, it could be said that job satisfaction and burnout are actually two different phenomenons and a teacher who is satisfied with job could remain in the same school or in the profession even though he/she is burnout.

Satisfaction with Salary: Adding to the literature (e.g., Imazeki, 2005; Loeb et al., 2005; Ondrich et al., 2008), teachers who were satisfied with their salary had lower probability of leaving the profession or moving to another school. Indeed, satisfaction with salary seem to be the most important predictor of whether moving to another school or leaving the profession among the school-level predictors.

Student Characteristics of School

Higher student quality was associated with lower probability of moving to another school or leaving the profession. This was in agreement with literature (Kelly, 2004; Kukla-Acevedo, 2009). Contradicting with the previous research (Borman & Dowling, 2008; Boyd, Lankford, Loeb, & Wyckoff, 2005; Hanushek, Kain, & Rivkin, 2004; Scafidi, Sjoquist, & Stinebrickner, 2005), the data for this study showed that teachers working at schools serving greater percentage of minority students had a lower rate of moving to another school and leaving the profession. Agreeing with the same line of research, moving to another school was more likely if the teachers were working at schools serving greater percentage of poor students, while leaving the profession was not associated with school poverty. Schools with a higher poverty rate are usually involved in federal or state interventions and with more accountability requirements. This increased accountability may add to teachers' burnout and dissatisfaction. Thus, the higher teacher turnover in these schools may also be a function of increased accountability placed on schools and teachers (Clotfelter, Ladd, Vigdor, & Diaz, 2004).

Conclusion

Putting all together, congruent with the previous research (e.g., Kelly, 2004; Loeb et al., 2005), teachers' demographic and professional characteristics are stronger predictors of mobility decisions than perceived school climate and working conditions, and characteristics of students. The findings have shown that approximately two-thirds of the explained variance in the turnover were accounted for by the teachers' personal and professional characteristics and remaining one-third was accounted for by the perceived school climate and work conditions and student characteristics. When the effect sizes were ordered from the largest to the smallest, being from Black racial background, having no certification, having a probationary certification, and having 11 or more years of experience appeared to be the most significant predictors of leaving the job. Being from Black or Other (except for Hispanic) racial/ethnic background, working at schools where 75% or more students participate in free and reduced price lunch program, and being between 40 and 49 years old appeared to be the most significant predictors of moving to another school. Findings of the study show that higher teacher quality (defined as certification, advanced degree and more years of experience) is associated with a higher likelihood of staying at the same school. As this is a correlational study, it is impossible to conclude whether teachers without adequate preparation causes a higher turner, but possible to conclude that they tend to have a higher turnover. This is intuitive for the policy decisions that promote recruiting highly qualified teachers, usually measured by the degree and certification.

In addition, although this study did not investigate the indirect effects of teacher characteristics, school climate or student characteristics through job satisfaction or burnout on teachers' mobility decisions, another important point to be made, based on the findings, is that teacher characteristics, perceived school climate and work conditions, and student characteristics predicted teacher turnover, after burnout and job satisfaction were controlled. In other words, even though the kindergarten teachers may feel that they are satisfied with their job, or that they are not burnout, the school climate, salary, student characteristics and professional qualifications may influence their mobility decisions.

This study comes with several limitations. The follow-up sample included only one academic year to the next. It is unclear if the leavers in this sample are temporary or permanent leavers. It is highly likely that the majority of the teachers who left the profession for pregnancy or childrearing, for some other family and personal reasons, or for educational reasons would return to teaching. Another limitation of this study is that the weighted follow-up sample composed only about one-fifth of the base-year sample. The information for the remaining base-year sample is unknown. Thus, although these findings provide evidence about the kindergarten teachers' job status in the follow-up

year, the findings may be biased because of the sample attrition.

The results of this study underscore the importance of examining the relationship between teacher, school and student characteristics and teachers' turnover decisions. As a considerable portion of the findings showed differences from the prior research, this study also underlines the importance of understanding the sources of turnover for subgroups of teachers and paying attention to teachers who have been underrepresented in the research. Finally, it highlights that moving to another school and leaving the profession are two different phenomena and suggests the importance of identifying movers and leavers when studying the turnover to draw accurate conclusions.

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