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Follow the Leader: Principal Characteristics and Teachers' Labor Market Decisions

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Amid heightened concerns of teacher shortages, we document the role of principals in shaping teachers' labor market decisions. Using teacher transfer applications from a large urban school district, we find that teachers are most likely to seek transfer away from schools with less-experienced principals and weaker leadership. The qualities of principals that attract applicants are survey reports of strong leadership, applicant-principal demographic congruence, and especially having worked with the principal previously. Ultimately, schools with high rates of teacher transfer seeking and exit receive few applications per teacher vacancy. These schools are likely to have shallow applicant pools and may need district support with recruitment in the short term, with the longer-term goal of developing leaders who retain teachers.

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I. Introduction

Nationally, 16 percent of teachers leave their schools each year – some teach at other schools, and others leave the profession entirely (National Center for Education Statistics, 2022). There are growing concerns that as the economy continues to recover from the pandemic and individuals face less uncertainty in the job market, teachers will exit the profession at higher rates than in years past, given the increasing demands and responsibilities they face in the classroom (García, Kraft, and Schwartz, 2022). Some teacher turnover occurs naturally due to retirements–perhaps occurring earlier in one's career because of the pandemic–or reductions in the number of positions associated with declining K-12 enrollment. At the same time, there is evidence that schools struggle to fill vacant positions. For example, a survey of school districts in North Carolina identified over 11,000 educator and staff vacancies that were unfilled entering the 2022-23 school year, an increase over the previous fall (Schlemmer & deBruyn, 2022). The increase in educator turnover, coupled with difficulties hiring for open positions, raise urgent questions about what district and school leaders can do to make schools desirable places to work.

In most public school settings, teachers are compensated on a known and clearly defined salary schedule (Saenz-Armstrong, 2021). Typically, teachers have relatively little control over their salaries outside of gaining years of experience or attaining specific credentials. Therefore, teachers who seek to maximize their utility but face constraints around increasing salary will seek out settings that are more desirable places to work. For example, teachers may prefer working in schools with high test scores to schools with low test scores because it is easier for a teacher to ensure that students meet state standards if they are already performing well academically. Teachers in schools with high test scores may also be under less scrutiny or pressure to increase achievement levels. In other words, a teacher who moves from a low- to a

high-performing school might not increase their salary but might still lighten their workload. In fact, research on teacher turnover has identified a number of student characteristics that are correlated with increased teacher exit from schools (see Nguyen et al., 2020), including high levels of student economic disadvantage (Scafidi, Sjoquist, and Stinebricker, 2007; Simon and Johnson, 2015) and low achievement (Adnot et al., 2017; Boyd et al., 2005a; Falch and Rønning, 2007; Kraft, Marinell, and Yee, 2016; Ronfeldt, Loeb, and Wyckoff, 2013). Thus, the schools that would likely benefit most from stability in the teaching force often experience the highest rates of teacher turnover.

Public schools serve the students who walk in the door, regardless of their demographic characteristics or academic needs. While schools do not control their student populations, other school-based factors can influence teachers' labor market decisions. School districts and policymakers have more control over their investments in developing quality school leaders and improving working conditions. Research has shown that teachers' perceptions of the quality of their school leadership and the level of support they receive from their principals are associated with reductions in both intended teacher turnover (Johnson, Kraft, and Papay, 2012; Ladd, 2011) and actual teacher turnover (Allensworth et al. 2009; Boyd et al., 2011a; Boyd et al., 2011b; Grissom and Bartanen, 2019; Grissom, 2011; Kim, 2019; Kraft, Marinell, and Yee 2016).

Given that principals make decisions that directly impact the day-to-day work lives of teachers (see Grissom et al., 2021, for a review), principals wield considerable influence over teacher decisions around staying or leaving. As such, it is also likely that principals play an important part in attracting candidates to their schools. Yet little is known about the characteristics of principals that are associated with teacher retention and exit as well as with attracting candidates to their schools. In addition, little is known about the relative importance to

teachers of principal characteristics when deciding whether to apply to a teaching position. We argue that pinpointing specific qualities of principals that are associated with retaining and attracting teachers can shed light on human resources policies and district investments in principal development, which can ultimately foster a more stable teacher workforce.

In this paper, we document the importance of principals in shaping teachers' labor market decisions. We examine the association between a range of principal characteristics (e.g., years of experience, principal-teacher demographic congruence, and teacher reports of leadership quality) and a teacher's decision to engage in a job search for other teaching positions, as well as principal characteristics that a teacher values when seeking a new teaching position. Using longitudinal administrative and survey data from a large urban school district from 2007-08 to 2018-19, we address the following research questions:

- 1. What principal characteristics are associated with a teacher's decision to apply for a transfer away from their current school?
- 2. Do transfer applicants prefer certain kinds of principals over others?
- 3. Are teacher turnover rates correlated with teacher requests to transfer into schools? That is, do transfer applicants seek schools that are most likely to have vacant teaching positions?

We find that in any given year about one in ten teachers applies to transfer. These transfer applicants are less likely than non-applicants to work at schools led by principals of their same race, and tend to work at schools led by less-experienced principals who receive less-favorable reports of school leadership quality. Conditional on applying for a transfer, applicants tend to request transfers to schools where the principals are of their same race and same sex, implying that teachers prefer demographic congruence with their principals. Transfer applicants also

request schools where teachers have favorable reports of school leadership quality, although this relationship is small in magnitude. By far the strongest predictor of whether the transfer applicant requests a transfer to a particular school is whether the applicant had previously worked with that school's principal, namely for the principal at a different school in the past. Therefore, principal characteristics are strong predictors of whether a teacher applies for a transfer away from their current school and whether the teacher requests a transfer to a specific school. Finally, we find that schools where a large share of teachers apply to transfer tend to receive interest from relatively few transfer applicants for each open position, compared to schools where a small share of teachers apply to transfer. This finding suggests that schools of the former kind–where principals might need support on how to develop strong school cultures and retain teachers–are also those that also struggle to attract teachers.

This research has important implications for district human capital management policies and practices. District efforts to develop the capacities of principals to foster strong school climates and positive relationships with their teaching staff are investments that can pay off in terms of increased teacher workforce stability. Principals who make their schools desirable places to work retain and attract teachers, thereby raising the chances that their schools are adequately staffed. Districts could provide additional assistance to schools that have difficulty attracting teachers, tailoring hiring initiatives to highlight opportunities at these schools and providing additional support for new teachers in these schools, which could foster long-term stability in the teaching staff. Finally, we argue that districts can use teachers' transfer applications as an early warning indicator for teacher exit as well as for whether a school might face a shallow candidate pool. This information can convey to central office human resources managers which schools may require targeted recruitment, retention, and hiring efforts. Districts

could also survey transfer applicants to gain a better understanding of why they are seeking to leave their schools and what improvements or changes need to be made for them to stay. In an era where teacher hiring is especially challenging, an understanding of the roles that principals can play in teacher recruitment and retention is critical.

II. What We Know about Teacher Turnover and Teacher Preferences for Schools

A. Teacher Turnover

Teacher turnover has long been a concern for education policymakers. While some turnover-especially of persistently low-performing teachers-is beneficial to students (Adnot et al., 2017; Sartain and Steinberg, 2016), most turnover is likely disruptive to student achievement (Hanushek, Rivkin, and Schiman, 2016; Henry and Redding, 2020; Ronfeldt, Loeb, and Wyckoff, 2013; Sorensen and Ladd, 2020) and school culture (Bryk and Schneider, 2002; Guin, 2004). A large body of research across many settings has identified factors correlated with teacher turnover. Earlier studies focused on the correlation between student characteristics and teacher turnover. Using data on a nationally representative sample of teachers in the Schools and Staffing Survey (SASS), Ingersoll (2001) found that schools serving large numbers of students living in poverty suffer from high turnover, which creates a "revolving door" of teachers in these schools. Other research shows that turnover is related to student demographics like racial composition, poverty, and school achievement levels (Lankford, Loeb, and Wyckoff, 2002; Loeb, Darling-Hammond, and Luczak, 2005; Scafidi, Sjoquist, and Stinebrickner, 2007), and that these school characteristics are stronger predictors of turnover than salary (Hanushek, Kain, and Rivkin, 2004; Scafidi, Sjoquist, and Stinebrickner, 2007). These patterns suggest that students in these schools are likely subject to serial teacher turnover.

The expansion of surveys of teacher and student perceptions of their schools in places like Chicago, New York City, Tennessee, and North Carolina make it possible to consider school culture and climate as correlates of teacher turnover. Indeed, teachers' preferences for working conditions may be stronger than their preferences for student characteristics (Horng, 2009). Research on Chicago Public Schools indicated that teacher turnover rates are low at schools where teachers report high levels of trust between teachers and the principal as well as strong instructional leadership (Allensworth et al., 2009). In New York City, researchers documented correlations between teachers' reports of their principal's support for teachers and effective management and retention (Marinell and Coca, 2013). Also in New York City, improvements in teacher reports of school leadership quality were associated with reductions in teacher turnover (Kraft, Marinell, and Yee 2016). In Massachusetts, there is also a strong relationship between reports of principal quality and teacher turnover (Johnson, Kraft, and Papay 2012). Looking nationally using a more recent administration of the SASS, teachers' reports of principal effectiveness are associated with turnover, and the relationship is especially strong in "hard-tostaff schools" (Grissom, 2011). Finally, research also shows that teacher retention is higher among teachers who work for principals of the same race or sex compared to teachers who work for demographically dissimilar principals (Grissom and Keiser, 2011; Grissom, Nicholson-Crotty, and Keiser, 2012; Bartanen and Grissom, 2021). Collectively, this research suggests that principals are an important factor that teachers consider when assessing their employment options within the teaching profession.

B. Teacher Preferences for Schools

The literature on teacher turnover documents the importance of school-based factors in whether teachers leave or stay in their schools. A small body of research also documents what

teachers look for when applying to teaching positions, yielding insights into school characteristics that appeal to teachers. This research uses teachers' transfer applications to determine their preferences for types of schools. Studies that draw on transfer applications are important, because studies that rely on teachers' observed moves between schools to draw inferences about teacher preferences for schools are likely to conflate supply-side factors (e.g., teacher preferences for certain school characteristics) and demand-side factors (e.g., vacant positions) of the labor market for teachers. Studies that use transfer applications overcome this limitation if applications can be submitted to any school and not only to schools with openings.

Using transfer application data from New York City, researchers find that the likelihood that a teacher applies for a transfer is strongly correlated with the teacher's current school's characteristics-namely student performance, the student attendance rate, and the suspension rate-and that teachers seek to transfer to schools that serve fewer Black students and that have lower poverty rates and lower crime rates (Boyd et al., 2011b). Two other papers, set in Italy and Peru, examine centralized hiring and assignment systems. In Italy, the authors focused on the geographic location of the school and its student characteristics, finding that teachers prefer schools with fewer students with identified disabilities and lower grade retention rates, as well as schools that are located in more-resourced geographic areas (Barbieri, Rossetti, and Sestito 2011). Similarly, in Peru, researchers found that teachers prefer schools with more resources and that are closer to home (Bertoni et al., 2022). These findings are similar to studies in the United States that found that teachers are more likely to stay in more-advantaged schools.

There are only two papers that look at teachers' demand for schools in ways that relate to school leaders. Using transfer applications to investigate the importance to a teacher of having a same-sex principal, researchers found that male teachers are more likely to apply to transfer out

of schools led by female principals and into schools led by male principals (Husain, Matsa, and Miller, 2021). Other research that uses administrative personnel data showed that, following a principal transition, the teaching staff at schools shift to more closely align with the principal's race–both because the principal is more likely to retain teachers who are their same race and attract new teachers of their same race (Bartanen & Grissom, 2021).

C. Our Contribution

In this paper, we bring together the teacher turnover literature and the applicant preferences literature. We focus on the importance of school principals in teachers' preferences for where to work. Cultivating effective principals has been at the center of recent policy efforts. And that is no surprise, given the mounting evidence that effective principals have large positive effects on student achievement (Bartanen and Grissom, 2021; Sebastian and Allensworth, 2012; Sebastian and Allensworth, 2019), student attendance (Bartanen, 2020), and school climate and working conditions (Burkhauser, 2017; Grissom, Blissett, and Mitani 2018; Sebastian and Allensworth, 2019). Teacher turnover is also correlated with reports of the quality of school leadership (as cited above). However, none of the papers using transfer applications data to characterize teacher preferences for schools includes principal characteristics and measures of school leadership that the previous literature suggest are important for mitigating turnover. Our goal is to fill this gap in the literature.¹

Given the evidence on the importance of principals in shaping educators' day-to-day workplace experiences, our study seeks to uncover more about the ways that principals influence teachers' labor market decisions. We ask, how important are principals in retaining teachers and

¹ We acknowledge that our conclusions may only apply to teachers who are currently employed in a district, because we do not consider external applicants and their preferences for schools. We note, however, that the district in our study hires internally more frequently than externally, with only about 33 percent of vacancies filled by individuals from outside of the district over the study period.

attracting transfer applicants to their schools? And what principal characteristics are important to transfer applicants as they decide whether to request a transfer to a particular school? We expand on the existing literature by examining how much preferences for certain types of schools or principals vary by teacher demographics, namely race and sex. The answers to these questions can inform district policies and practices aimed at increasing educator stability, increasing teacher diversity, and reducing unfilled vacancies.

III. Study Context: Teacher Pay and Transfers

The setting for our study is a large urban school district in the United States. Over the time period we examine, the district's teacher workforce grew from roughly 9,300 employed in 2007-08 to about 10,500 by 2018-19, a nearly 10-percent increase. In a given year, about 19 percent of all teachers transferred (i.e., left their schools but remained in the district) or exited the district altogether, and about 76 percent of these approximately 22,000 unique teachers transferred or exited the district at some point. The student population, which grew by 15 percent and reached well over 150,000 students in 2018-19, is diverse on a number of dimensions. About half of all students were racial/ethnic minorities, and nearly 1 out of every 3 students was eligible for free- or reduced-price lunch. The district also features a range of school settings, including magnet schools and year-round options. We note that charter schools are managed by the state and not the district, so they are not included in our study.

Two features of the setting allow us to describe teachers' preferences for certain schools and principals and not others. The first is the structure of teacher pay. The state legislature sets the base salary schedule for teachers, and teachers can increase their pay by teaching for an additional year or earning National Board Certification.² In addition, districts can offer "local

²At about the middle of the study period, the state legislature removed pay increases for teachers who hold graduate degrees. Any teacher with a graduate degree at the time was "grandfathered in" and continues to receive a higher

supplements" to increase teacher pay beyond what is offered in the legislated salary schedule. Because supplements are paid from local revenue streams, districts vary in their capacity to offer supplements and in the amount. Local supplements then are a way for neighboring districts to compete with one another for teachers in labor markets that encompass multiple districts. While teachers can change their pay by moving between districts, they cannot do so by moving to different schools within the same district. Therefore, teachers who seek to transfer within the district are likely motivated by non-pecuniary reasons, such as preferences for improved working conditions and more-experienced principals.

The second feature is a centralized process by which intra-district teacher movement is managed between the end of one school year and the start of the next. Throughout the year, vacant teaching positions exist at schools and are publicly advertised on the district's job board. But for roughly four months during the spring semester, the Transfer Period is opened to eligible teachers employed in the district.³ During this window, teachers can formally express to principals of other schools within the district their interest in transferring to their schools with a start date of the following school year. To engage in the transfer process, a teacher completes the web-based Transfer Application, which lists every school in the district regardless of whether the school currently has vacant teaching positions. To request a transfer to a particular school, the teacher checks the box next to the name of any school on the Transfer Application. There is no limit on how many schools a transfer applicant can request.

On the school side, principals must make staff rosters for the next school year using various sources of information. In March, the district allocates staff months of employment to

salary, while teachers new to the state's public schools since then do not receive differential compensation by graduate degree.

³ Part-time teachers and those with terminating contracts or expired licenses make up about 12 percent of classroom teachers over the study period and are not eligible to transfer. We exclude these teachers from our study.

schools for the next school year, so each principal knows roughly how many staff they will have and in what positions. In April, teachers at each school submit an "intent to return" letter to their principals, which gives principals a sense of which teachers plan to return to their school. During the Transfer Period, each principal can access summary reports listing which teachers on their own staff have applied for a transfer and which teachers at other schools have requested to transfer to their school. A principal can interview a transfer applicant who expressed interest in the school (a) whose certifications are relevant to the subjects of known or expected vacancies, and (b) who may be a good fit for the school but for whom there are no expected vacant positions in the applicant's subject or grade level of certification. Because every vacancy is publicly advertised, both transfer applicants and external job applicants (non-employees) can apply to them. However, if vacancies emerge during the Transfer Period or after it has closed, principals might ultimately hire transfer applicants who they had interviewed at a time when no relevant vacant positions were available or expected.

Teachers face costs when completing the Transfer Application. Perhaps the biggest cost may be that their current principals can see that they applied to transfer, and completing an application does not guarantee that a transfer will occur. However, engaging in the transfer process also provides a number of benefits to teachers. Although teachers seeking a transfer are not given priority in hiring over external applicants, the former are listed above external applicants when principals view applicants to a particular vacancy. In addition, transfer applicants can interview with principals at other schools and accept an offer at another school without their current principal's permission. Any movement that occurs outside of the Transfer Period is subject to the approval of the applicant's current principal and central office. For any teacher who completes the Transfer Application, we assume that the benefits outweigh the costs.

IV. Data and Samples

A. Data

In this paper, we use two main sources of data: administrative data (primarily personnel records and teacher transfer applications) and survey responses from school-based staff about working conditions. We construct an analytic dataset that spans the 2007-08 to 2018-19 school years.⁴ The unit of analysis is an individual teacher in a given year. The longitudinal personnel data allow us to identify teachers' and principals' schools of employment, link teachers to the principals they have ever worked with in various capacities, and observe when a teacher switches schools or leaves the district entirely. We merge the personnel data with records of teacher transfer applications, which allows us to observe two outcomes for every teacher in every school year: (a) whether the teacher completed the Transfer Application, and, if so, (b) the list of schools that the teacher requested.

Having created a dataset with employment history, we use other administrative and survey data to describe schools and their principals. Using a combination of student- and schoollevel district administrative datasets, we create school-level measures of student characteristics (e.g., proportion racial/ethnic minority, achievement levels) and building characteristics (e.g., whether the school is newly opened). Previous findings about the factors that predict teacher turnover motivates the inclusion of these school-level measures.

To measure teacher perspectives on school working conditions and school leadership quality, we use responses to what we refer to as the School Staff Survey, which is administered every other school year to all licensed school-based educators (e.g., teachers, administrators, media coordinators, counselors) employed in the state's K-12 traditional public schools.

⁴ Some data elements extend beyond this timeframe. For example, data used to determine teacher exit after 2018-19 includes data from the 2019-20 school year.

Specifically, we identified ten items about school leadership that were asked every school year when the School Staff Survey was administered. Example items are "The school leadership consistently supports teachers," and "The school improvement team provides effective leadership at this school." The full set of items is shown in the school-level summary statistics presented in Table 2. We use this collection of items as a barometer for a principal's leadership quality, which is important to teachers as they decide where they want to work.

Beginning with anonymized respondent-level School Staff Survey files, we implement principal component analysis (PCA) to identify the single component underlying the ten school leadership items. This one component explains 45 to 50 percent of the variance underlying the items. (Table A.1 reports the weights on the main component.) We standardize this component within every school year to have mean 0 and unit standard deviation. We then recover the mean of this component at the school-by-year level and again standardize it within the school year to have mean 0 and unit standard deviation. Hereafter, we refer to this single component as the *School Leadership Index*.⁵

Drawing from the rich sources above, we document the relationship between teachers' transfer behaviors and the following key measures related to principals:

- Demographic congruence between principals and teachers (i.e., teacher and principal are the same race, teacher and principal are the same sex⁶);
- Stability in school leadership (e.g., the principal has been at the same school for five years or more, the principal is new to the school);

⁵ We use survey items that were administered in the school years 2005-06, 2007-08, 2009-10, 2011-12, 2013-14, 2015-16, and 2017-18. For every "off-year" (i.e., the year when the state did not administer the survey), we assign to every school its most recent prior year's results, including the prior year's value on the School Leadership Index. For example, every school's 2007-08 results serve as its 2008-09 results.

⁶ We acknowledge the complexity of gender identity by using the term "sex" instead of "gender."

- Leadership quality as measured by the School Leadership Index described above; and
- Whether the applicant and the principal were previously colleagues.

B. Sample Description

Table 1 summarizes the characteristics of transfer-eligible teachers, transfer applicants, and principals. Transfer-eligible teachers are predominantly female (81 percent) and white (83 percent) with only 2 percent of teachers identifying as Hispanic (Column 1). The average transfer-eligible teacher has 12 years of experience overall and 6 years of experience in their current school. Nearly 1 in 5 have attained National Board certification, and 42 percent hold a graduate degree. Seventy-one percent of these teachers are the same race as their principal, and 57 percent are the same sex as their principal. On average, transfer-eligible teachers live about 7.4 miles from the schools where they work. Among all such teachers, 14 percent apply to transfer away from their current schools.

Transfer applicants generally resemble the population of transfer-eligible teachers, with a few noticeable differences (Column 3): 51 percent have a master's degree or higher (relative to 42 percent of the population of transfer-eligible teachers), are slightly older on average (43years-old relative to 40-years-old), and are more-experienced on average (15 years compared to 12 years). In addition, only 63 percent of transfer applicants are the same race as their principals compared to 71 percent of all teachers, and applicants live a little farther from their schools than transfer-eligible teachers (8.35 miles compared to 7.39 miles).

Principals differ from teachers and transfer applicants in observable ways (Column 5). In terms of demographics, fewer principals are female (59 percent) than teachers, and principals are more likely to be Black (19 percent) than teachers. All principals have graduate degrees as per

certification requirements, but only 8 percent hold National Board Certification. The average principal is a few years older than the average transfer-eligible teacher and has been a principal in their current school for about 4 years.

In Table 2, we show summary statistics for a range of school-level characteristics. Panel A focuses on principal characteristics. At the average school, 68 percent of teachers are the same race as the principal and 60 percent are the same sex as the principal. Regarding experience, 56 percent of schools are led by a principal who has 5 or more years of experience as a principal, 37 percent are led by a principal who has 5 or more years of experience as the principal of the current school, and 17 percent are led by a principal who is new to the school. Panel A also reports the average proportion of Staffing Survey respondents in a school who agreed or strongly agreed with (a) statements about leadership in their schools, and (b) statements about school leader efforts to address employee concerns. For example, at the average school, 70 percent of respondents agreed or strongly agreed that there is an atmosphere of trust and mutual respect in the school. In our analyses, we use the standardized School Leadership Index divided into quartiles. The average school in the bottom quartile was 1.33 standard deviations below the mean on this index, while the average school in the top quartile was 1.16 standard deviations above the mean.

While not the emphasis of this paper, we report on school characteristics (see Panel B of Table 2) that prior studies have shown are correlated with teacher retention and exit. Among all schools, 31 percent are Title I (i.e., at least 40 percent of a school's students qualify for free- or reduced-price lunch) and 7 percent opened within the past 3 years. In the average school, 54 percent of students are racial/ethnic minorities, 38 percent qualify for free or reduced-price lunch, and 14 percent are identified as gifted and talented. At the average school, 63 percent of

students score at least proficient on end-of-grade or end-of-course tests for accountability, and 13 percent are chronically absent (i.e., miss 15 or more instructional days in a school year).

V. Methods

A. Characterizing Principals in the Schools Teachers Seek to Exit

We begin by estimating the relationship between whether or not a teacher applies to transfer away from their current school and the characteristics of the teacher, current principal, and current school. We present results from variations of the linear probability model shown in Equation (1), which is indexed by teacher *i*, school *s*, and year *t*.

(1) *Apply*it = α + *CurrentPrincipal*_{st}' δ + *CurrentSchool*_{st}' β + *Teacher*_{it}' γ + θ_t + ε_{ist} . *Apply* equals 1 if teacher *i* in year *t* applies to transfer (i.e., requests one or more schools on the Transfer Application) and 0 otherwise.⁷ We model the decision to apply to transfer as a function of a vector of school leadership qualities as *CurrentPrincipal* (described in detail above), which are the key variables of interest. Based on previous literature, we also include a broad set of school characteristics as control variables, *CurrentSchool*, for the school where the teacher is currently employed, including student proficiency rates, student body characteristics, and distance from teacher's home. We also account for observable teacher characteristics, *Teacher*, to account for the fact that different teachers (e.g., females vs. males, those living farther away from vs. closer to their schools) may differ in their likelihood of applying to transfer. We also control for year fixed effects, θ_t , to account for shocks affecting all teachers in a given year. We cluster standard errors at the teacher's current school.

The estimated coefficients of interest are in the $\hat{\delta}$ vector, which denotes the relationship between principal characteristics at the current school and the likelihood that a teacher applies to

⁷ We note that we cannot observe whether a teacher applies to teaching positions in other districts.

transfer away from that school. Negative estimates suggest that teachers working in schools led by principals with these qualities are less likely to apply to transfer. For example, if teachers at schools with strong reports of principals leadership are less likely to complete the Transfer Application, then the sign on that estimated coefficient would be negative.

B. Estimating Applicant Preferences over Principal Characteristics

Because every school in the district is listed on the Transfer Application regardless of whether the school will have an opening in the following school year, we can assume that any transfer applicant who requests the school on the Transfer Application prefers that school to their current school. Thus, we apply an estimation strategy similar to that shown in Equation (1) to explore the relationship between whether the transfer applicant requested a school on the Transfer Application and the characteristics of that school's principal. We estimate Equation (2).

(2) [*Request*_{ist} | *Apply*_{it} = 1] = α + *Principal*_{st}' δ + *School*_{st}' β + *Teacher*_{it}' γ + θ_t + ε_{iqt}

Conditional on applying to transfer, *Request* equals 1 if transfer applicant *i* requested school *s* in year *t*, and 0 otherwise. By linking every transfer applicant to every school on the Transfer Application in that year, we include every school in the applicant's choice set, although we also report in the appendix results from alternative specifications estimated over choice sets limited to schools serving grade levels where the transfer applicant's certifications are relevant. We model the decision to request a school on the Transfer Application as a function of a vector of the school's leader as *Principal*, which are the key variables of interest. We also include a broad set of school characteristics as control variables, *School*, for each school. The *Principal*, *School*, and *Teacher* vectors are the same as described for Equation (1). We also control for year fixed effects, θ_t , to account for shocks affecting all transfer applicants in a given year. We cluster standard errors at the applicant level.

VI. Results

A. What Kinds of School Do Teachers Seek to Exit?

Table 3 reports the associations between various factors at the school where the teacher currently works and the teacher's likelihood of applying for a transfer.⁸ We note that the model in column 1 accounts for many school characteristics that are correlated with one another. (See Table A.2 in the appendix for these correlations.) We also operationalize the regressors–except teacher age–as indicator variables, which allows us to compare the magnitudes of the coefficients across principal, school, and teacher characteristics.

The focus of our paper, however, is on understanding the role of principals in teachers' decision-making around whether to apply to transfer, and these results are reported in Panel A of Table 3. A teacher is less likely to apply to transfer away from their school if the current principal is of their same race. Specifically, a teacher whose principal is of the same race is 3.5 percentage points less likely to apply to transfer than if the principal is of a different race. A teacher whose principal is of the same sex is 1.1 percentage points more likely to apply to transfer than if the principal has been at the school for five or more years, teachers are 1.5 percentage points less likely to apply for a transfer than if the principal has been there 1-4 years. Conversely, when a principal is new to a school, teachers are 3.6 percentage points more likely to apply for a transfer than if the principal stability appears to be an important factor in a teacher's decision to stay at their current school. Panel A also presents the relationship between teacher reports of school leadership quality and the likelihood of applying to transfer. Relative to schools in the lowest

⁸ The correlation between the share of teachers who complete a transfer application and the school's turnover rate is 0.57, which supports our position that there is value in using information about teachers seeking to transfer away from a school as an early indicator that the school will likely experience turnover at the end of the school year.

School Leadership Index quartile (Quartile 1), teachers in schools in the highest quartile (Quartile 4) are 6.0 percentage points less likely to apply for a transfer. This finding affirms the idea that teacher working conditions, which are driven largely by principals, matter for teacher retention.

Student characteristics at a teacher's current school are also associated with the likelihood of applying to transfer, although not all correlations are significant (Panel B of Table 3). The teachers in our setting are 2.3 percentage points more likely to apply to transfer away from schools serving a majority non-white student population than from a majority white student population, and 2.6 percentage points less likely to apply to transfer away from schools that serve relatively large shares of students identified as gifted and talented. Proximity to one's school and measures of teacher quality are most predictive of applying to transfer. Teachers who live the farthest from their schools are 5.4 percentage points more likely to apply to transfer than teachers who live closest to their schools. This result is consistent with studies documenting the localism of teacher preferences for where to work (see Engel and Cannata, 2015)-that is, at schools located close to where teachers completed their teacher education programs (Bertoni et al., 2019); schools in proximity to where they grew up (Boyd et al., 2005b) and where they currently live (Boyd et al., 2013; Cannata, 2010; Engel, Jacob, and Curran, 2014); and, among beginning teachers, schools near where they completed their student teaching assignments (Krieg, Theobald, and Goldhaber, 2016).

Teacher characteristics are also associated with the likelihood of applying to transfer (Panel C of Table 3). Teachers with a graduate degree are 2.8 percentage points more likely to apply for a transfer than those with only a bachelor's degree. Years of overall teaching experience is also predictive of applying to transfer: teachers with 3 or more years of experience

are 4.2 percentage points more likely to apply to transfer than novice teachers. However, teachers with 3 or more years of experience at their current schools are 1.2 percentage points less likely to apply to transfer. On the whole, these relationships suggest that experienced teachers and those with graduate degrees may be seeking teaching positions that are more desirable to them.

Here and in subsequent analyses we also report on teacher preferences separately based on transfer applicant race and sex. There is consistent evidence that students of color benefit from having at least one teacher of color in terms of improved achievement but also other outcomes like the reduced likelihood of receiving exclusionary discipline actions (see Redding, 2019, for a recent review). This research has led to increased efforts to diversify the educator workforce, which has proven challenging as public school students are becoming more diverse without concomitant changes in educator demographics (Gershenson, Hansen, & Lindsay 2021; Lindsay, Blom, & Tilsley, 2017). While recruitment is an important determinant of who comprises the educator workforce, retention is a key component as well, so there is a need to better understand how school principals can retain teachers, especially teachers of color. Therefore, we explore heterogeneity in the likelihood that a teacher applies to transfer away from their current school by examining this outcome for four groups of teachers: Black males, Black females, white males, and white females. About 2 percent of teachers in this school district identified as Latino, so we cannot include them in our analysis.

We report the results of separate regressions for teacher race-sex subgroups in Columns 2-5 of Table 3. We find that teachers are less likely to apply to transfer if they work in schools led by same-race principals, a relationship that appears to be driven largely by white teachers. White male (female) teachers who work for a white principal, for example, are 4.2 (3.8)

percentage points less likely to apply for a transfer than their counterparts who work for a principal of a different race. Although there are fewer Black teachers than white teachers, which reduces how precisely we can estimate these relationships, the magnitude of the same-race principal coefficient is relatively small for Black male and Black female teachers. Across all groups of teachers, principal stability is correlated with a lower likelihood of applying to transfer, though Black teachers are especially likely to seek transfers out of schools led by new principals. We also find that Black female teachers and white male and female teachers are less likely to apply to transfer away from schools where teachers report strong levels of leadership, and these effects are larger for females than for males regardless of race.

B. Transfer Applicant Interest in Principals and Schools

With a better sense of the schools from which teachers apply to transfer away, we now consider the characteristics of principals and schools of interest to transfer applicants. We begin by thinking about interest in a school from two perspectives: (a) the applicant's interest in a school, and (b) how much interest the school receives from applicants. First, from the applicant perspective, we find that the average applicant requested about 15 schools, although there is considerable variation across applicants. About 40 percent of transfer applicants requested five schools or fewer, whereas nearly half applied to 7 or more schools (45 percent), implying that transfer applicants are likely to express interest in multiple schools.

Figure 1 shows the distribution of the number of schools that transfer applicants requested, by applicant race and sex. White male transfer applicants are more likely to request a limited number of schools relative to other applicants. However, other applicant characteristics are more strongly correlated with how many schools the applicant requested. Table 4 presents the results from a simple OLS regression of the number of schools on transfer applicant

characteristics. With the exception of age, no applicant demographic characteristic is associated with the number of requested schools. Moreover, the relationship between measures of teacher quality and the number of schools requested is mixed. Transfer applicants who hold a graduate degree apply to roughly one more school than their counterparts with bachelor's degrees. Transfer applicants with National Board Certification or who have three or more years of experience choose two to three fewer schools than their counterparts who are not certified or have fewer years of experience. This evidence suggests that more-experienced transfer applicants with professional certifications may conduct more-targeted searches than some of their counterparts.

Second, from the school perspective, we find that schools vary in how much interest they receive from transfer applicants. Figure 2 shows the distribution of transfer applicant interest based on the number of applicants requesting the school. The average school received interest from 98 transfer applicants (s.d. 34), some schools received interest from well over 100 transfer applicants, and others received interest from fewer than 50 applicants. Variation in interest across schools is consistent with our theory that some principal and school characteristics appeal more strongly to transfer applicants than others.

We now turn to our regression analysis on the relationship between whether teachers request the school and the characteristics of that school and its principal. Panel A of Table 5 reports on the likelihood that a teacher requests the school. If the school's principal is of the same race or sex as the transfer applicant, then the applicant is slightly more likely to request the school than if the principal is of a different race or sex. This likelihood amounts to about a one percentage-point increase in the likelihood of requesting the school for both race and sex. To be sure, it may be that teachers and principals self-select into schools that serve student populations

that are racially congruent with their own. However, the finding that transfer applicants prefer to work for a principal of the same race persists even after accounting for the racial composition of the school's student population. Transfer applicants are also slightly less likely to request schools that are in the bottom quartile of the School Leadership Index relative to schools in higher quartiles, but this relationship is extremely small in magnitude. This finding suggests that, on the whole, school leadership quality at other schools may be less important to transfer applicants than other principal characteristics. We note that the magnitude on the coefficients predicting whether a transfer applicant requests a school are much smaller in magnitude than the coefficients in Table 3 that predict whether a teacher applies for a transfer. We suspect that teachers have less information about schools where they do not work relative to schools where they do work–or have worked–and that many pieces of information we do not observe in the data influence a teacher's interest in potential schools.

Of all the principal characteristics we consider, however, by far the strongest determinant of whether the transfer applicant requested the school is if the applicant had previously worked with the principal in another school context. Specifically, having been a colleague of the principal is associated with a 9.8 percentage-point increase in the likelihood that the applicant requested the school on the Transfer Application. For context, a school whose principal is of the same race or sex as the applicant corresponds with around a 1 percentage-point increase in a teacher requesting the school. From the administrative data, we cannot determine whether this pattern is due to principals targeting former colleagues and asking them to apply to transfer or if applicants independently seek schools led by former colleagues, though likely both are contributing factors. Regardless of the mechanism, having worked with a principal previously is the most important principal-focused predictor of whether a transfer applicant requests the

school. Indeed, having worked with the principal previously is comparable in importance to working at a school located near one's home.

Many school characteristics are also associated with a transfer applicant's likelihood of requesting a school on the Transfer Application (Panel B of Table 5). Transfer applicants are more likely to request schools that serve relatively large shares of high-achieving students and have lower rates of chronic absenteeism. Also attractive to transfer applicants are schools that serve relatively small shares of students of color, students who qualify for free- or reduced-price lunch, and students who qualify for special education services. Additionally, and consistent with prior studies, transfer applicants are more likely to request schools that are closer to their homes, with the relationship being strongest for white female teachers.

We also present in Table 5 heterogeneity in transfer applicant preferences for principal and school characteristics at the intersection of applicant race and sex. Again, because there are relatively few Black male transfer applicants, we may not be able to identify all relationships as being statistically significant due to small sample sizes. Regardless of their own race and sex, however, transfer applicants prefer to work for principals of their same race or sex. The School Leadership Index is most important to white female applicants, with inconsistent, negative, or statistically insignificant relationships for the other transfer applicant subgroups. Finally, in regards to whether the applicant had the principal as a colleague previously, there is a strong correlation among applicants who are Black females and white males and females, and a small but insignificant correlation for Black males.

In Table 5, we assume that all schools listed on the Transfer Application are in every transfer applicant's choice set. We test this assumption by restricting every transfer applicant's choice set to the schools where their certifications render them eligible for employment. For

example, an Elementary certification is relevant to schools serving students in grades K-5 and not to schools serving grades 6-12, so we include in the choice set of a transfer applicant with an Elementary certification only schools serving grades K-6. Table A.3. presents the results of this robustness test. The point estimates are qualitatively similar to those based on the unrestricted choice set (see Table 5), albeit slightly larger in magnitude (Column 1). We observe similar patterns when we conduct the analysis by race and sex (Columns 2-5).

C. The Importance of Previous Experience Working with a Principal

Because transfer applicants are more likely to select schools on the Transfer Application led by principals who were former colleagues, we explore this relationship further. In Table 6, we provide more information about the nature of this relationship, focusing on the sample of applicant-year-school pairs restricted to schools on the Transfer Application led by principals with whom the applicant had previously worked. Conditional on requesting a school where the transfer applicant had worked with the principal in the past, most applicants had previously worked under that principal's leadership. Most of the time (52 percent of cases), the teacher previously worked with the selected principal in the role of a principal or in the role of assistant principal (41 percent of cases). It was less common for the transfer applicant to have previously worked with the principal as a peer (i.e., a fellow teacher) or in any other role (e.g., school counselor, instructional coach). This pattern also emerges across the race-sex subgroups we considered previously. We note that white females are less likely to have worked with the principal as a colleague in the past, although this subgroup is the largest.

We hypothesize that transfer applicants are more (less) likely to request schools led by principals with whom they had worked in the past when they agreed (disagreed) with the leadership styles and priorities of these principals. To test this hypothesis, we conduct an analysis

on transfer applicants who (a) requested schools led by former colleagues, and (b) did not request schools led by different former colleagues. For example, Teacher A previously worked with Principal B and also with Principal C. We can observe whether Teacher A requested the school led by Principal B and the school led by Principal C. To be included in this analysis, Teacher A must have requested Principal B's school but not Principal C's school (or vice versa). Then, we ask if applicants are more likely to request schools where they previously had positive experiences with the principal and less likely to select schools where they had less-positive experiences. Based on the sub-sample of transfer applicants and the schools led by principals with whom they had previously worked, 23 percent of applicants selected a school led by a principal with whom they had worked. This supports our intuition that transfer applicants draw from their knowledge of, experiences working for, former principals to make informed decisions about the schools to which they would consider transferring.

Table 7 presents the results of this exercise. For convenience, we report in Column 1 the estimates from Equation (2) estimated over all transfer applicants and principals (i.e., Column 1 of Table 5). We find that principal characteristics operate differently for transfer applicants when they have previous experience working with the principal. In the cross-section, we find that a transfer applicant's recollection of a principal's leadership style, which we operationalize as the School Leadership Index for the most recent year when the applicant worked with the principal, is predictive of requesting the school (Column 2). A school led by a principal whose School Leadership Index was in the highest quartile in the most recent year when the applicant worked with the principal is 7.8 percentage points more likely to be requested than a school led by a principal whose School Leadership Index was in the lowest quartile in the most recent year the applicant worked with the principal. Transfer applicants also value principal stability, inasmuch

as they are 7.4 percentage points less likely to request the school where the principal they worked with previously is in their first year at the school. Racial congruence is another important factor: transfer applicants are 5 percentage points more likely to request the school if the principal they worked with previously is their same race than if the principal is of a different race; no such relationship emerges for sex. When we control for transfer applicant fixed effects to compare selection decisions within an applicant, the estimates are attenuated and become less precise (Column 3) but are qualitatively similar to those recovered over the cross-section (Column 2).

Our analysis highlights the importance to transfer applicants of having experienced desirable working conditions under principals, applicant-principal racial congruence, and principal stability. While what we can say from the administrative data and the survey data is somewhat limited, these findings highlight areas for future qualitative research to unpack these important dimensions of teacher labor market decisions.

D. Putting the Pieces Together: Exit and Interest in Schools

In this section, we bring together school-level information about teacher mobility-both teacher turnover and the potential exit of transfer applicants-and measures of transfer applicant interest in a school. In doing so, we build on our analyses above of teacher- and transfer applicant-level interest in principals and schools by characterizing teacher labor market dynamics holistically, through a school-level lens. We believe this analysis offers central planners a starting point for deriving actionable insights from teacher transfer applications data. The focal question we address here is whether schools that have high rates of teacher turnover (or low rates of teacher retention) also receive little interest (i.e., are requested by few transfer applicants), which implies that these schools have relatively shallow transfer applicant pools and

could face difficulty filling vacancies. Indeed, how much teacher mobility and transfer applicant interest intersect in a school is an important consideration for central planners charged with developing recruitment and retention strategies.

We approach this inquiry descriptively. First, we examine the relationship between school-level teacher retention-that is, the share of teachers at a school who returned the following school year-and three measures: (a) transfer applicant interest in the school as simply the number of transfer applicants requesting the school, (b) the ratio of transfer applicants selecting a school to the number of teachers employed at the school, and (c) the ratio of transfer applicants selecting a school to the number of teachers who exited the school. Table 8 shows the relationship between teacher retention and the three measures. Each panel reports the mean level of transfer applicant interest by teacher retention quartile, such that schools in the first quartile have the lowest levels of teacher retention while schools in the fourth quartile have the highest levels of teacher retention. Panel A shows the average number of transfer applicants selecting a school, by teacher retention quartile. An average school with low teacher retention receives 84 transfer applicants compared to 98 transfer applicants to a school with high levels of teacher retention. Panel B shows the ratio of transfer applicants to teacher positions at the school, which accounts for the fact that staff size may be an important factor. Schools look similar on this measure regardless of retention rate, with schools receiving interest from about two transfer applicants per current teacher. We believe Panel C is the most informative, as it shows the number of transfer applicants to each school divided by the number of open teaching positions (proxied by the number of teachers who exited the school). Here, we observe large differences in transfer applicant interest, on average, between schools with low versus high retention rates. A school with low levels of retention-and, as such, large numbers of vacancies-receives interest

from about nine transfer applicants per vacancy, on average, whereas schools with high levels of retention receive interest from about 30 transfer applicants per vacancy. In other words, schools that struggle to retain teachers also struggle to attract teachers and therefore have shallow transfer applicant pools, while schools that retain teachers do not appear to struggle to attract teachers and therefore have deeper transfer applicant pools. This pattern suggests that principals of schools that receive interest from few transfer applicants may have to be less selective in their hiring than their counterparts at schools that receive interest from more applicants.

Second, we examine principal, school, and student characteristics for two types of schools: (a) *High Turnover* + *Low Interest* schools, or those that many teachers exit annually and that relatively few applicants request (column 1 of Table 9); and (b) Low Turnover + High Interest schools, or those that few teachers exit annually and that a sizable number of applicants request (column 2 of Table 9). When the data are viewed in this way, it is apparent that these two types of schools differ on a number of salient dimensions. *High Turnover + Low Interest* schools exhibit less principal-teacher racial congruence than Low Turnover + High Interest schools. On average, 54 percent of teachers are the same race as their principals in the former versus 76 percent in the latter. The difference between these two types of schools on the School Leadership Index is also apparent. The average *High Turnover* + *Low Interest* school scores 0.664 SD below the mean; the average Low Turnover + High Interest school scores 0.387 SD above the mean. Finally, these schools serve different student populations. *High Turnover + Low Interest* schools tend to serve more affluent and higher-achieving student populations than Low Turnover + High *Interest* schools. Thus, schools that serve the most vulnerable student populations likely experience high levels of teacher turnover and have the hardest time replacing teachers who exit.

VII. Discussion

Principals directly and indirectly influence the school environment, the quality of classroom instruction, the extent to which teachers have agency over their work, and, ultimately, student outcomes. In this paper, we highlight another critical area that principals influence: teacher labor market decisions, namely whether teachers apply to transfer away from their current schools and whether they request to transfer into specific schools. In the context of the district we study, schools where teachers reported school leadership of lower quality generally had the highest rates of teachers applying to transfer away, even after accounting for a robust set of teacher and school characteristics that are important factors for teacher turnover. We also found that not all schools were equally attractive to transfer applicants, who prefer schools where teachers report better working conditions and where they recall favorably previously working for these principals.

Principals who struggle to cultivate strong working conditions are likely to experience the highest levels of teacher turnover and, to make matters worse, struggle to fill vacancies at their schools. Presumably, schools with shallow applicant pools may not find candidates that meet their needs. This matters for central planners thinking about school staffing and how to make schools desirable places to work, especially during a time of increased concern about teacher turnover due to the COVID-19 pandemic. The good news is that research shows that school climate–of which working conditions is one dimension–is malleable, and importantly, principals are the drivers of that change (Aldridge & Fraser, 2016; Allensworth & Hart, 2018; Kraft, Marinell, & Shen-Wei, 2016; Kraft & Papay, 2014). School districts might consider providing extra support and mentorship for principals so that they are equipped with the leadership skills needed to foster school climates where teachers like to work and where they feel effective.

Admittedly, it can be incredibly difficult to change school climate, especially in large school districts. However, examples abound of districts successfully implementing change when they focus on specific data points that are easy for them to construct and for users to interpret. For example, Chicago Public Schools is touted as having improved graduation rates considerably, namely by identifying and meaningfully supporting ninth-grade students who were not considered "on track" to finish high school (Allensworth, 2013; Phillips, 2019). Students are considered on-track to graduate if they failed no more than one semester of a core course in ninth grade and have enough credits to move on to sophomore year. The on-track indicator is highly predictive of a student's likelihood of graduating from high school (Allensworth & Easton, 2005). It was successful because the measure is easy to calculate and easy to understand, and it gave policymakers and practitioners a clearly defined place to direct their efforts. This example from Chicago shows how powerful simple metrics and data points can be for eliciting meaningful change in schools.

In a similar vein, this paper points to a leading indicator that districts and principals can use as a proxy for teacher turnover: the share of teachers in a school who apply for a transfer. While not all of those teachers will transfer, the share of such teachers, or *the transfer application rate*, at a school is highly correlated with the school's eventual turnover rate that year. Using the transfer application rate, central planners can be proactive on a number of fronts. In the context of the district we study, central planners know which teachers applied to transfer mid-spring when the application window closes, which is well in advance of when schools typically hire for the following school year. Central planners who manage the educator workforce could use information from transfer applications to identify schools where historically large shares of teachers apply to transfer. With that information, central planners could provide

principals at these schools with additional training and resources for building positive relationships with their teachers that ultimately lead them to stay.

Given that this paper leverages administrative data on the educator workforce from a single school district, we acknowledge that the patterns we find might be different-or might not emerge-in other settings. However, we raise a few points to consider when thinking about generalizability. We find that school-level factors like student achievement and student demographics are correlated with teacher transfer behaviors, and papers using data from other contexts document similar relationships. We also know that teachers in this district-which we note is considered better-resourced and offers a higher local salary supplement than neighboring districts-are making decisions within a set salary scale, which we believe is similar to how teachers operate in the vast majority of other districts. Since teachers cannot increase their pay by switching schools within the district, their utility comes from selecting into schools whose working conditions they prefer more than those of their current schools. Our study underscores the importance of the role of the principal as a key determinant of teacher satisfaction and working conditions, and that is not context-specific.

Finally, given that serving as a principal is certainly a complex and nuanced job with a wide range of responsibilities, we can only consider dimensions of school leadership that are available in the administrative and survey data. We believe there is an important place for qualitative research in this area, which may include interviewing teachers about how they approach the labor market and how they evaluate their options. Qualitative research would uncover a deeper understanding of teachers' employment strategies and bring out other areas for which changes in policy or practice could lead to a more stable workforce. It would be beneficial

for other school districts to engage in this line of questioning with their research partners in order to understand whether these findings generalize to their school district.

This paper contributes to an area where research can be put into practice with a sense of urgency. Although the COVID-19 pandemic appears to be waning, concerns continue to grow about residual teacher burnout, increased teacher turnover, and teacher shortages (Diliberti, Schwartz, and Grant, 2021; Jotkoff, 2022; Pressley, 2021; Steiner and Woo, 2021). A survey of teachers in March 2021 found that about one out of every four teachers had contemplated leaving the profession (Steiner and Woo, 2021), which is an increase over reports in previous years. It is a time of inherent churn and uncertainty. While teachers are considering exiting the profession at higher rates, the teacher labor market is complicated by declines in student enrollment, potentially resulting in fewer positions available at some schools. Some schools, however, may have many open vacancies, with leaders relying on long-term substitutes or educators staffing classrooms instead of serving in other roles in the school building. This paper highlights the importance of developing strong principals as a potential solution, at least in part, to make schools desirable places to work.

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Table 1. Teacher, applicant, and principal characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)
	Transfer-Eligible Teachers		Transfer Applicants		Principals	
	Mean	SD	Mean	SD	Mean	SD
Proportion Female	0.81		0.83		0.59	
Race/Ethnicity						
Proportion Asian	0.01		0.01		0.00	
Proportion Black	0.12		0.14		0.19	
Proportion Other Race	0.03		0.04		0.04	
Proportion White	0.83		0.80		0.76	
Proportion Race Unknown	0.01		0.01		0.00	
Proportion Hispanic	0.02		0.03		0.01	
Race/Ethnicity and Sex						
Proportion Black Female	0.10		0.13		0.14	
Proportion Black Male	0.02		0.02		0.05	
Proportion White Female	0.67		0.66		0.42	
Proportion White Male	0.16		0.14		0.34	
Age	40.32	11.10	43.33	10.76	47.00	8.34
Proportion Master's Degree or Higher	0.42		0.51		1.00	
Proportion National Board Certification	0.20		0.20		0.08	
Years of Experience in Position	12.33	8.75	15.11	8.43	6.65	5.96
Years of Experience at Current School	6.21	4.65	8.39	5.03	4.15	2.85
Proportion Same Race as Principal	0.71		0.63			
Proportion Same Sex as Principal	0.57		0.60			
Distance from Home to School (Mean)	7.39	7.78	8.35	8.06		
Proportion Applied to Transfer	0.14		1.00			
Number of Schools Requested on Transfer Application			14.71	21.48		
Proportion Leave School	0.16		0.13			
Observations						
Person-Year	92,545		13,365		1,869	
Person	18,102		7,273		352	

Note: Data span the school years 2007-08 through 2019-20. The unit of observation is the person-year. Applicants are the subset of transfer-eligible teachers who applied to transfer away from their schools. Age is calculated on September 1. Distance from home to school is straight-line distance. For about 6.5 percent of teacher-year records, the home address could not be geocoded, was out of state, or was in-state but more than 75 miles away from the school. For these records, we impute the annual mean distance from teachers' homes to their schools. Educators who leave their schools are not observed in their schools the following school year.

Table 2. School-level characteristics.

	Mean	SD	Obs
Panel A. Principal Characteristics	0.69	0.25	1.072
Proportion of Teachers are the Same Race as the Principal	0.68	0.35	1,872
Proportion of Teachers are the Same Sex as the Principal	0.60	0.38	1,872
Proportion of Schools where Principal has 5 or More Years of Experience	0.56	0.50	1,8/1
Proportion of Schools where Principal has 5 or More Years of Experience at the Current School	0.37	0.48	1,879
Proportion of Schools where Principal is New to the School	0.17	0.38	1,875
School Leadership Measures from the Teacher working Conditions Survey			
Proportion of Teachers that Agree or Strongly Agree with the following Statements about Leadership			
There is an atmosphere of tweet and westered assessed in this school	0.70	0.10	052
There is an atmosphere of trust and mutual respect in this school.	0.70	0.19	953
The school leadership consistently supports teachers.	0.73	0.16	953
l eachers are neid to high professional standards for delivering instruction.	0.92	0.07	953
I eachers receive feedback that can help them improve feaching.	0.82	0.12	953
The school improvement team provides effective leadership at this school.	0.79	0.14	953
Proportion of Teachers that Agree or Strongly Agree that the School Leadership Makes a Sustained			
Effort to Address Concerns about:	0.72	0.15	052
Leadership Issues	0.73	0.13	953
Facilities and Resources	0.80	0.12	953
The Use of Time in My School	0.73	0.14	953
Protessional Development	0.78	0.12	953
New Teacher Support	0.74	0.13	953
School Leadership Index	0.00	1.00	0.52
Mean	0.00	1.00	955
Quartile 1 (low)	-1.33	0.67	241
	-0.22	0.21	237
Quartile 5	0.42	0.18	240
Quartine 4 (mgn)	1.10	0.31	233
Panel B. School Characteristics			
Proportion Title I	0.31	0.46	2,025
Proportion Opened within the Past 3 Years	0.07	0.26	2,025
Proportion Asian	0.07	0.09	2,039
Proportion Black	0.27	0.16	2,039
Proportion Other Race	0.05	0.03	2,039
Proportion White	0.46	0.19	2,039
Proportion Hispanic	0.17	0.10	2,039
Proportion Racial/Ethnic Minority	0.54	0.19	2,039
Proportion Free or Reduced Lunch	0.38	0.20	2,039
Proportion Special Education	0.14	0.08	2,039
Proportion Gifted and Talented	0.14	0.11	2,039
Proportion Scoring Proficient or Higher on Standardized Tests for Accountability	0.68	0.16	2,022
Proportion Chronically Absent	0.13	0.10	2,024

Note: The unit of observation is the school-year. Means and standard deviations are reported for the Teacher Working Conditions Survey items in years when the survey was administered (i.e., every other year 2006-2018 inclusive). The School Leadership Index is the main component recovered from a principal components analysis of all survey items and is standardized within year to have mean 0 and unit standard deviation. Obs=Observations.

Table 3. Predictors of teachers applying to transfer away from their schools.

	(1)	(2)	(3)	(4)	(5)
	All Teachers	Black Teachers		White 7	Feachers
		Male	Female	Male	Female
Panel A. Principal Characteristics					
Principal and Teacher are Same Race	-0.035***	-0.006	-0.016	-0.042**	-0.038***
Principal and Teacher are Same Sex	0.011*	-0.025	0.020	-0.028**	0.020**
Principal has 5 or More Years of Experience at Current School	(0.005) -0.015**	(0.020) -0.031	(0.014) -0.018	(0.010) -0.020*	(0.007) -0.011*
Principal's First Year at School	(0.005) 0.036***	(0.019) 0.059**	(0.013) 0.055**	(0.008) 0.026**	(0.006) 0.034***
School Leadership Index	(0.007)	(0.022)	(0.017)	(0.010)	(0.008)
Quartile 2	-0.032***	0.017	-0.015	-0.033**	-0.035***
Quartile 3	(0.009) -0.043***	(0.024)	(0.018)	(0.011) -0.027*	(0.010) -0.048***
Quartie 5	(0.009)	(0.021)	(0.020)	(0.012)	(0.010)
Quartile 4 (Highest)	-0.060***	0.046	-0.051**	-0.036**	-0.066***
	(0.009)	(0.043)	(0.019)	(0.011)	(0.010)
Panel B. School Characteristics					
School Opened within the Past 3 Years	-0.003	0.036	0.029	-0.013	-0.007
Demont of New White Students is Constantion on Equal to 50 Demont	(0.012)	(0.041)	(0.033)	(0.015)	(0.011)
Percent of Non-white Students is Greater than or Equal to 50 Percent	0.023**	0.024	0.023	0.000	0.02/**
	(0.009)	(0.023)	(0.021)	(0.012)	(0.008)
Percent of Free or Reduced Lunch Students is above Yearly District Average	0.015	0.011	-0.006	0.031*	0.014
Demont of Spacial Education Students is shown Vasily District Average	(0.010)	(0.029)	(0.022)	(0.014)	(0.010)
referit of Special Education Students is above rearry District Average	(0.012	(0.019)	(0.015)	0.004	(0.008)
Percent of Gifted and Talented Students is above Yearly District Average	-0.026**	0.022	-0.008	-0.029*	-0.023*
	(0.009)	(0.022)	(0.017)	(0.012)	(0.009)
Percent of Students Scoring Proficient or Higher on Current Year Standardized Tests	(0.007)	(***==)	(0.0017)	(****=)	()
for Accountability is above Yearly District Average	-0.009	-0.030	-0.028+	0.001	-0.010
	(0.007)	(0.024)	(0.015)	(0.010)	(0.008)
Percent of Chronically Absent Students is above Yearly District Average	-0.018*	0.012	0.000	-0.039***	-0.014+
Distance from Home to Current School (Miles)	(0.008)	(0.020)	(0.018)	(0.012)	(0.008)
Quartile 2	0.017***	0.033	0.029+	0.017	0.014**
<u> </u>	(0.004)	(0.031)	(0.015)	(0.011)	(0.004)
Quartile 3	0.034***	0.072*	0.023	0.015	0.038***
	(0.005)	(0.028)	(0.016)	(0.010)	(0.005)
Quartile 4 (Farthest from Home)	0.054***	0.055 +	0.052**	0.045***	0.056***
	(0.005)	(0.031)	(0.019)	(0.013)	(0.006)
Panel C. Teacher Characteristics					
Female	0.021***				
	(0.005)				
Asian	-0.040*				
	(0.018)				
Black	-0.013				
Other Base	(0.011)				
Other Race	-0.021				
Race Unknown	-0.024				
	(0.019)				
Hispanic	0.021	-0.182**	-0.174***	-0.179***	0.016
	(0.017)	(0.055)	(0.027)	(0.028)	(0.032)
Age on Sep 1	-0.001***	-0.003**	-0.002**	-0.002***	-0.001***
Mastar's Dagraa or Higher	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Master's Degree of Higher	(0.003)	(0.025	(0.012)	(0.008)	(0.004)
National Board Certified	-0.002	-0.070***	0.005	-0.011	0.000
	(0.004)	(0.019)	(0.021)	(0.008)	(0.005)
3 or More Years of Experience	0.042***	0.055+	0.072***	0.040***	0.040***
-	(0.005)	(0.028)	(0.019)	(0.010)	(0.006)
3 or More Years of Experience in Current School	-0.012**	-0.024	-0.014	-0.014	-0.008+
	(0.004)	(0.018)	(0.011)	(0.009)	(0.005)
Constant	0.173***	0.138*	0.128**	0.247***	0.188***
	(0.017)	(0.058)	(0.044)	(0.027)	(0.019)
R-Squared	0.030	0.046	0.025	0.034	0.032
Observations					
Teacher-Year	92,540	2,029	9,279	15,032	61,732
leacher	18,101	442	1,844	2,606	11,931
Mean Outcome	0.144	0.105	0.180	0.124	0.143

Note: The unit of observation is the teacher-year. The outcome equals 1 if the teacher applied for a transfer, 0 otherwise. The School Leadership Index is from the current year (i.e., even-numbered year when the Working Conditions Survey was administered) or immediate prior year (i.e., lagged); Quartile 1 is the omitted group. Distance from home to current school is reported in miles; Quartile 1 (closest to home) is the omitted group. All specifications control for year fixed effects and indicators for missing Hispanic, missing new-to-school principal, and distance imputed. Standard errors are clustered at the teacher's current school. Asterisks denote statistical significance: +0.10 *p<0.05, **p<0.01, **p<0.001.

Table 4. The relationship between number of schools selected on the transfer application and applicant characteristics.

	Total Schools
	Selected
Female	0.25
	(0.59)
Asian	-0.21
	(2.22)
Black	1.14
	(0.78)
Other Race	-0.60
	(1.42)
Race Unknown	1.21
	(1.79)
Hispanic	0.21
	(1.67)
Age	-0.12***
	(0.02)
Master's Degree or Higher	1.25**
	(0.39)
National Board Certified	-2.63***
	(0.46)
3 or More Years of Experience in Position	-2.36**
	(0.72)
3 or More Years of Experience in Current School	-2.21***
	(0.41)
Constant	17.89***
	(1.32)
R-Squared	0.029
Observations	
Applicant-Year	13,364
Applicant	7,272
Mean Outcome	12.42 (SD: 18.64)

Note: The outcome is the number of schools selected on the transfer application. All specifications control for year fixed effects. Standard errors are clustered on the applicant's current school and reported in parentheses unless otherwise noted. Asterisks denote statistical significance: +0.010 *p < 0.05, **p < 0.01, ***p < 0.001.

Table 5. Transfer applicant preferences for principal and school characteristics.

	(1)	(2)	(3)	(4)	(5)
	All Applicants	Black A	Black Applicants		pplicants
		Male	Female	Male	Female
Panal A Driveinal Changesteristics					
Panel A. Principal Characteristics					
Principal and Applicant are Same Race	0.009***	0.006+ (0.003)	0.006***	0.004***	0.006***
Duinsing and Applicant on Some Car	0.000***	(0.005)	0.002	0.000***	0.005***
Principal and Applicant are Same Sex	(0.009^{111})	(0.014)	(0.002+	(0.009^{111})	(0.003^{+++})
Principal has 5 or More Years of Experience at Current School	-0.001***	-0.006*	-0.003*	(0.001)	-0.001*
	(0.000)	(0.003)	(0.001)	(0.001)	(0.001)
Principal's First Year at School	0.000	-0.002	0.002	0.001	-0.001
	(0.001)	(0.004)	(0.001)	(0.001)	(0.001)
School Leadership Index for Current Year or Prior Year	(0.00-)	(0.000)	(0.000)	(0.000)	(0.000)
Quartile 2	0.001 +	-0.009+	-0.009***	0.002	0.002***
	(0.001)	(0.005)	(0.002)	(0.001)	(0.001)
Quartile 3	0.003***	-0.014**	-0.008***	-0.002+	0.007***
	(0.001)	(0.005)	(0.002)	(0.001)	(0.001)
Quartile 4 (Highest)	0.004***	-0.017**	-0.004*	-0.006***	0.009***
	(0.001)	(0.005)	(0.002)	(0.002)	(0.001)
Principal and Applicant were Colleagues	0.098***	0.018	0.095***	0.082***	0.103***
	(0.004)	(0.021)	(0.012)	(0.010)	(0.005)
Panel B. School Characteristics					
School Opened within the Past 3 Years	0.006***	0.030**	0.012***	0.009***	0.003*
	(0.001)	(0.009)	(0.003)	(0.003)	(0.001)
Percent of Non-White Students is Greater than or Equal to 50 Percent	-0.013***	0.003	0.003	-0.016***	-0.015***
	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
Percent of Free or Reduced Lunch Students is above Yearly District Average	-0.006***	-0.012*	-0.004	-0.010***	-0.006***
	(0.001)	(0.005)	(0.003)	(0.002)	(0.001)
Percent of Special Education Students is above Yearly District Average	-0.005***	0.012**	0.001	-0.000	-0.007***
	(0.001)	(0.004)	(0.002)	(0.002)	(0.001)
Percent of Gifted and Talented Students is above Yearly District Average	-0.000	0.065***	0.009+	0.042***	-0.015***
	(0.002)	(0.012)	(0.005)	(0.004)	(0.002)
Percent of Students Scoring Proficient or Higher on Current Year Standardized	0.000***	0.004	0.004	0 000***	0.000***
lests for Accountability is above Y early District Average	0.008***	0.004	-0.004+	0.009***	0.009***
Demont of Chamically, Abant Stylents is above Veerly Distaint Avenue	(0.001)	(0.005)	(0.002)	(0.002)	(0.001)
Percent of Chronically Adsent Students is above Yearly District Average	-0.006****	(0.033^{+++})	0.003	$(0.001)^{++++}$	-0.014***
Distance from Home to School on Transfer Application (Miles)	(0.001)	(0.000)	(0.003)	(0.003)	(0.001)
Quartile 1 (Closest to Home)	0 104***	0.057**	0.078***	0 002***	0 111***
Quartité i (closest to frome)	(0.002)	(0.057)	(0.010)	(0.002)	(0.003)
Quartile 2	0.046***	0.026+	0.030**	0.047***	0.048***
Quartito 2	(0.002)	(0.013)	(0.009)	(0.005)	(0.002)
Ouartile 3	0.016***	0.019+	0.003	0.020***	0.018***
	(0.002)	(0.011)	(0.009)	(0.004)	(0.002)
Constant	0.084***	0.138	0.117***	0.077***	0.091***
	(0.008)	(0.090)	(0.031)	(0.021)	(0.008)
R-Squared	0.031	0.066	0.021	0.037	0.038
Observations	0.031	0.000	0.021	0.057	0.030
Applicant-Year-Request	1 985 419	32 980	250 660	278 383	1 318 365
Applicant-Year	13 364	218	1.675	1.874	8,878
Applicant	7,272	134	835	989	4,896
11	.,_,_				.,570
Mean Outcome	0.084	0.086	0.091	0.083	0.082

Note: The unit of observation is the applicant-year-request. The outcome equals 1 if the applicant requested the school on their transfer application, 0 otherwise. The School Leadership Index is from the most recent past year when the TWC Survey was administered; Quartile 1 is the omitted group. Distance from home to school on the transfer application is reported in miles; Quartile 4 (farthest from home) is the omitted group. For about 1.5 percent of applicant-year records, the home address could not be geocoded, was outside of North Carolina, or was in North Carolina but more than 75 miles away from the school. For these records, we impute the annual mean distance from all transfer applicants' homes to all schools. All specifications control for missing indicators for new-to-school principal and imputed home-to-school distance; binary indicator variables denoting Asian, Black, Other Race (White is the omitted group), Hispanic and a missing Hispanic indicator, female, master's degree or higher, and National Board Certification; 3 or more years of teaching experience; 3 or more years of teaching experience in current school; and year fixed effects. Standard errors are clustered on the applicant. Asterisks denote statistical significance: +0.10 * p < 0.05, **p < 0.01, ***p < 0.001.

Table 6. The prior professional relationship between applicants and the principals at schools requested on the Transfer Application.

	All			TTTT	1.
	Applicants	Black A	pplicants	White Applicants	
		Male	Female	Male	Female
Principal	0.52	0.69	0.52	0.61	0.50
AP	0.41	0.31	0.40	0.34	0.43
Teacher	0.09	0.00	0.08	0.08	0.09
Other	0.09	0.03	0.09	0.08	0.09
Observations					
Applicant-Year-Request	2,938	29	374	418	1,982
Applicant-Year	2,541	26	313	343	1,652
Applicant	1,670	20	203	222	1,148

Note: The unit of observation is the applicant-year-request. The analytic sample includes cases in which the applicant selected on the Transfer Application a school where the applicant knew the principal as a colleague in one or more roles (e.g., the principal had been the applicant's former principal) during one or more prior years. Each cell denotes the proportion of applications in which the applicant knew the principal in the role denoted by the row label. Proportions in a column will not sum to 1 because a teacher could have worked with the same principal in multiple prior roles. AP = Assistant Principal. Other = any role except principal, AP, and teacher.

Table 7. Principal characteristics and applicant selection on the Transfer Application.

	(1)	(2)	(3)	
	All Applicants and Principals	Applicants and the Principals with when they Previously Worked		
Principal and Applicant are Same Race	0.009***	0.050**	0.049	
	(0.001)	(0.016)	(0.034)	
Principal and Applicant are Same Sex	0.009***	-0.002	0.003	
	(0.001)	(0.014)	(0.031)	
Principal has 5 or More Years of Experience at Current School	-0.001***	-0.014	-0.009	
	(0.000)	(0.012)	(0.022)	
Principal's First Year at School	0.000	-0.074***	-0.055	
	(0.001)	(0.019)	(0.036)	
School Leadership Index for Current or Prior Year				
Quartile 2	0.001 +			
	(0.001)			
Quartile 3	0.003***			
	(0.001)			
Quartile 4 (Highest)	0.004***			
	(0.001)			
School Leadership Index for Last Year Teacher worked with Principal				
Ouartile 2		0.009	0.003	
× ·		(0.015)	(0.027)	
Ouartile 3		0.031+	0.043	
		(0.017)	(0.030)	
Ouartile 4 (Highest)		0.078***	0.072*	
		(0.019)	(0.035)	
Constant	0.084***	0.347***	0.343	
	(0.008)	(0.060)	(0.260)	
Applicant Fixed Effects	No	No	Yes	
R-Squared	0.031	0.071	0.640	
Observations				
Applicant-Year-Request	1,985,419	5,904	5,904	
Applicant-Year	13,364	4,743	4,743	
Applicant	7,272	2,764	2,764	
Principal-Year		1,203	1,203	
Principal		288	288	
Mean Outcome	0.084	0.226	0.226	

Note: The unit of observation is the applicant-year-request. The outcome equals 1 if the applicant selected the school on the Transfer Application, 0 otherwise. For reference, Column 1 reports coefficient estimates from Column 1 of Table 5. All specifications control for school and teacher characteristics from Equation (2) and year fixed effects. Column 1 controls for an indicator for whether applicant and principal were colleagues. Standard errors are clustered on the applicant. Asterisks denote statistical significance: +0.10 *p < 0.05, **p < 0.01, ***p < 0.001.

Table 8. Measures of teacher interest in school, by teacher retention. N=1,786.

Teacher Retention Quartile	Mean	SD	Median	Min	Max
1	84 37	31.25	83.00	17.00	180.00
2	93 58	32.06	91.00	25.00	180.00
3	95.66	33.19	93.00	18.00	185.00
4	98.23	31.34	99.00 99.00	21.00	182.00
Total	92.92	32.37	17.00	17.00	185.00

Panel A. Total applications to school.

Panel B. Applications to school per teacher currently employed.

	Mean	SD	Median	Min	Max
Teacher Retention Quartile					
1	2.29	1.20	2.11	0.38	9.14
2	2.23	1.06	2.13	0.41	7.55
3	2.06	0.99	1.93	0.46	5.39
4	2.10	0.96	2.03	0.35	6.12
Total	2.17	1.06	0.35	0.35	9.14

Panel C. Applications to school per teacher who exits.

	Mean	SD	Median	Min	Max
Teacher Retention Quartile					
1	8.57	4.83	7.64	1.35	35.00
2	12.71	6.27	11.88	2.15	50.33
3	15.77	7.92	15.00	3.23	53.00
4	30.61	23.25	25.00	3.69	153.00
Total	16.74	15.12	1.35	1.35	153.00

Note : The unit of analysis is the school-year. The mean retention rate (and standard deviation) for each teacher retention quartile is as follows: 0.713 (0.107) for Quartile 1, 0.821 (0.027) for Quartile 2, 0.867 (0.022) for Quartile 3, and 0.920 (0.028) for Quartile 4.

Table 9. Characterizing schools by turnover rates and demand for positions.

	(1)	(2)
	High Turnover + Low Interest	Low Turnover + High Interest
Proportion of Teachers that are the Same Race as Principal	0.543	0.759
Proportion of Teachers that are the Same Sex as Principal	0.654	0.588
Principal has 5 or More Years of Experience at Current School	0.292	0.442
Principal is New to the School	0.229	0.140
School Leadership Index for Current Year or Prior Year	-0.664	0.387
Proportion of Non-White Students	0.705	0.467
Proportion of Students Eligible for Free or Reduced Lunch	0.536	0.321
Proportion of Students Scoring Proficient or Higher	0.572	0.728
Observations		
School-Year	236	292
School	95	120

Note: The unit of observation is the school-year. Column (1) refers to schools in the top quartile in turnover rates and the bottom quartile in transfer applications per exiting teacher. These schools are likely to struggle filling vacant positions. Column (2) refers to schools in the bottom quartile in turnover rate and top quartile in transfer applications per exiting teacher. These schools are less likely to struggle filling vacant positions.



Figure 1. Kernel density plot showing the number of schools selected on the Transfer Application, by applicant race and sex.

Note: The unit of observation is the applicant-year. For illustrative purposes, we restrict the sample of applicants to those selecting no more than 40 schools on the Transfer Application, which is roughly one standard deviation above the mean.



Figure 2. Number of applicants selecting the school on the Transfer Application.

Note: The unit of observation is the school-year. The curve denotes the normal distribution. M = 98. SD = 34.

Table A.1. Weights from principal component analysis on School Staff Survey items.

	2006	2008	2010	2012	2014	2016	2018
Statements about School Leadership							
There is an atmosphere of trust and mutual respect in this school.	0.33	0.32	0.36	0.36	0.36	0.36	0.35
The school leadership consistently supports teachers.	0.34	0.34	0.37	0.37	0.37	0.37	0.36
Teachers are held to high professional standards for delivering instruction.	0.33	0.33	0.35	0.35	0.36	0.36	0.35
Teachers receive feedback that can help them improve teaching.	0.36	0.35	0.36	0.36	0.37	0.36	0.36
The school improvement team provides effective leadership at this school.	0.31	0.31	0.31	0.30	0.30	0.31	0.30
School Leadership Makes a Sustained Effort to Address Concerns about:							
Leadership Issues	0.30	0.29	0.28	0.29	0.28	0.28	0.30
Facilities and Resources	0.33	0.33	0.31	0.33	0.32	0.32	0.33
The Use of Time in My School	0.31	0.31	0.30	0.30	0.30	0.29	0.30
Professional Development	0.26	0.27	0.22	0.21	0.21	0.21	0.23
New Teacher Support	0.29	0.29	0.26	0.26	0.27	0.27	0.28
N Respondent	5,021	9,712	9,204	8,796	8,793	9,788	10,768

Note: The unit of observation is the respondent. The response options for each item are coded as: Strongly Disagree; Disagree; Agree; Strongly Agree; and Neither Disagree nor Agree (2006 and 2008) and Don't Know (2010) and later.

Table A.2. Correlations between school-level student characteristics.

		(1)	(2)	(3)	(4)	(5)	(6)
(1)	Proportion of Non-White Students	1.000					
(2)	Proportion of Free or Reduced Lunch Students	0.823*** (0.000)	1.000				
(3)	Proportion of Special Education Students	0.259*** (0.000)	0.392*** (0.000)	1.000			
(4)	Proportion of Gifted and Talented Students	-0.358*** (0.000)	-0.540*** (0.000)	-0.187*** (0.000)	1.000		
(5)	Proportion of Students Scoring Proficient or Higher on Standardized Tests for Accountability	-0.659*** (0.000)	-0.778*** (0.000)	-0.482*** (0.000)	0.447*** (0.000)	1.000	
(6)	Number of Chronically Absent Students per 100 Students	0.340*** (0.000)	0.424*** (0.000)	0.630*** (0.000)	-0.170*** (0.000)	-0.530*** (0.000)	1.000

Note: The unit of observation is the school-year. N school-year records = 1,879. N school records = 185. Asterisks denote statistical significance: *p<0.05, **p<0.01, ***p<0.001. p-values are subject to Bonferroni correction.

Table A.3. Robustness check of applicant preferences for principal and school characteristics based on a choice set of schools restricted to those where applicant's certifications are relevant.

All Applicants Black Applicants White Applicants Panel A. Principal Characteristics		(1)	(2)	(3)	(4)	(5)
Male Female Male Female Panel A. Principal Characteristics Principal and Applicant are Same Race 0.011*** 0.010** 0.000?*** 0.000?*** 0.000?*** 0.000?*** 0.001**** 0.000*** 0.001**		All Applicants	Black Applicants		White Applicants	
Principal Characteristics Principal and Applicant are Same Race 0.011*** 0.010* 0.009*** 0.007*** 0.0002 Principal and Applicant are Same Race 0.011*** 0.016** 0.010 0.010*** 0.001 Principal and Applicant are Same Sex (0.001) 0.0002*** (0.001) 0.0002*** (0.001) Principal Ibas 5 or More Years of Experience at Current School (0.001) (0.001) (0.002) (0.001) (0.001) Principal Ibas S or More Years of Experience at Current School (0.001) (0.000) (0.002) (0.001) (0.001) Quartile 2 (0.001) (0.000) (0.002) (0.001) (0.002) (0.001) Quartile 3 (0.001) (0.007) (0.002) (0.001) (0.001) Quartile 4 (0.001) (0.002) (0.002) (0.001) Quartile 4 (0.001) (0.002) (0.002) (0.001) Quartile 4 (0.001) (0.012) (0.002) (0.001) Principal and Applicant were Colleagues (0.004*** (0.001)			Male	Female	Male	Female
Principal and Applicant are Same Race0.011***0.010**0.009***0.007****0.0007***0.0007***0.0007***0.0007***0.001***	Panel A. Principal Characteristics					
Her (0.001) (0.005) (0.002) (0.001) Principal and Applicant are Same Sax 0.007*** 0.016** 0.001 0.011*** 0.004*** Principal has 5 or More Years of Experience at Current School -0.002** -0.002 -0.001 -0.002* Principal is New to the School 0.001 -0.002* -0.001 -0.002 School Leadership Index for Current Year or Prior Year 0.001 -0.002 -0.001* -0.002 Quartile 2 0.002*** -0.006 -0.002** -0.002 (0.001) Quartile 3 0.004*** -0.01 -0.002** -0.002 (0.001) Quartile 3 0.004*** -0.016* -0.002** -0.006** 0.001*** Principal and Applicant were Colleagues 0.004*** -0.016* -0.007*** 0.009**** Principal and Applicant were Colleagues 0.009*** 0.019*** 0.009**** 0.009**** Principal and Applicant were Colleagues 0.009*** 0.019*** 0.009*** 0.019*** Principal and Applicant were Colleagues 0.009***	Principal and Applicant are Same Race	0.011***	0.010*	0.009***	0.007***	0.008***
Principal and Applicant are Same Sex 0.007*** 0.016*** 0.001 0.011*** 0.004*** Principal has 5 or More Years of Experience at Current School 0.001 0.0002 0.0001 0.0002 0.0001 Principal is New to the School 0.001 0.0004 0.002 0.0001 0.0002 0.0001 School Leadership Index for Current Year or Prior Year	1 11	(0.001)	(0.005)	(0.002)	(0.002)	(0.001)
$\begin{array}{c} \mbox{trans} trans$	Principal and Applicant are Same Sex	0.007***	0.016**	0.001	0.011***	0.004***
Principal has 5 or More Years of Experience at Current School -0.002** -0.007 -0.002 -0.001 -0.002** Principal is New to the School 0.001 0.0004 (0.002) (0.001) (0.002) School Leadership Index for Current Year or Prior Year 0.002** 0.006 -0.002** (0.007) (0.002) (0.004** Quartile 2 0.0027** 0.006 -0.004*** (0.007) (0.002) (0.007) Quartile 3 0.0011 (0.007) (0.002) (0.007) (0.002) (0.007) Quartile 3 0.0011 0.004** -0.011** -0.006** 0.006*** (0.007) Quartile 4 -0.016** -0.007*** 0.006*** 0.002** (0.001) Principal and Applicant were Colleagues 0.903*** 0.019 0.019*** 0.012** 0.007*** School Characteristics -	The part and Tripperson are same sen	(0.001)	(0.006)	(0.002)	(0.002)	(0.001)
n (0.001) (0.004) (0.002) (0.001) (0.001) Principal is New to the School 0.001 -0.002 0.004* 0.002 -0.000 School Leadership Index for Current Year or Prior Year 0.0011 (0.007) (0.002) (0.001) Quartile 2 0.0011 (0.007) (0.002) (0.002) (0.001) Quartile 3 0.004*** -0.011 -0.011*** -0.002 (0.001) Quartile 4 0.004*** -0.016* -0.006* (0.002) (0.001) Principal and Applicant were Colleagues 0.009*** 0.019 0.08**** 0.019** 0.019*** School Opened within the Past 3 Years 0.009*** 0.001 (0.003) (0.001) (0.003) (0.001) Percent of Non-White Students is dove Yearly District Average 0.001*** 0.001*** -0.018*** -0.019*** -0.019*** Percent of Sreeial Education Students is above Yearly District Average 0.004*** 0.001* -0.003** -0.009*** 0.001 0.0028* 0.001*** 0.0021 0.00	Principal has 5 or More Years of Experience at Current School	-0.002**	-0.007	-0.002	-0.001	-0.002**
Principal is New to the School 0.001 -0.002 0.004* 0.002 -0.000 School Leadership Index for Current Year or Prior Year	I I	(0.001)	(0.004)	(0.002)	(0.001)	(0.001)
Image: Constant of the second secon	Principal is New to the School	0.001	-0.002	0.004*	0.002	-0.000
School Leadership Index for Current Year or Prior Year 0.002** -0.006 -0.010*** 0.004*** Quartile 2 0.002** -0.006 -0.010*** 0.004*** Quartile 3 0.004*** -0.011 -0.011*** -0.002 0.002** Quartile 4 0.004*** -0.016* -0.007** -0.006*** 0.008*** Output 0.001 (0.007) (0.002) (0.002) (0.001) Principal and Applicant were Colleagues 0.003**** 0.019*** 0.019**** 0.009**** School Characteristics (0.001) (0.014) (0.005) (0.001) (0.012) (0.007) Percent of Non-White Students is Greater than or Equal to 50 Percent -0.016*** 0.008** -0.012*** -0.019*** (0.001) (0.001) (0.005) (0.003) (0.003) (0.001) Percent of Special Education Students is above Yearly District Average -0.007*** -0.008* -0.013*** -0.009*** (0.001) (0.008) (0.003) (0.003) (0.001) -0.008* -0.013*** -0.009*** Percent of Special Education Students is above Yearly District Average		(0.001)	(0.006)	(0.002)	(0.002)	(0.001)
Quartile 2 0.002** -0.006 -0.010*** 0.004** Quartile 3 0.0001*** -0.001 0.002) 0.002) Quartile 4 -0.011 -0.011*** -0.007*** 0.0007*** Quartile 4 -0.011 -0.011** -0.007*** 0.0007*** 0.001 (0.001) (0.003) (0.002) (0.001) Principal and Applicant were Colleagues 0.003*** 0.019 0.089*** 0.009 Panel B. School Characteristics (0.001) (0.014) (0.002) (0.001) Percent of Non-White Students is Greater than or Equal to 50 Percent -0.016*** 0.008 0.004 -0.022*** -0.019**** (0.001) (0.006) (0.003) (0.001) -0.008*** 0.011*** -0.008*** Percent of Non-White Students is above Yearly District Average -0.007*** 0.0012 -0.003* -0.009*** (0.001) (0.008) (0.003) (0.001) -0.008** -0.019*** Percent of Non-White Students is above Yearly District Average -0.007*** 0.012 -0.003	School Leadership Index for Current Year or Prior Year			~ /	. ,	~ /
Quarile 3 (0.001) (0.007) (0.002) (0.001) Quarile 4 -0.011*** -0.017*** (0.002) (0.001) Principal and Applicant were Colleagues 0.003**** (0.001) (0.002) (0.002) (0.001) Principal and Applicant were Colleagues 0.093**** 0.019 0.089**** 0.075*** 0.099*** Panel B. School Characteristics (0.001) (0.001) (0.014) (0.005) (0.004) (0.001) Percent of Non-White Students is Greater than or Equal to 50 Percent 0.009*** 0.002* 0.0019*** 0.0021*** 0.009*** Percent of Special Education Students is above Yearly District Average 0.0011 (0.001) (0.003) (0.001) Percent of Gifted and Talented Students is above Yearly District Average 0.001*** 0.002* (0.001) 0.000* 0.002* 0.009*** Percent of Sited and Talented Students is above Yearly District Average 0.001*** 0.002*** 0.001*** 0.002* 0.002* 0.001*** 0.002*** 0.009**** 0.002*** 0.001*** 0.002**** 0.002**** 0.	Quartile 2	0.002**	-0.006	-0.010***	0.004*	0.004***
Quartile 3 0.004*** -0.011 -0.011*** -0.002 0.007** Quartile 4 (0.001) (0.001) (0.002) (0.002) (0.001) Principal and Applicant were Colleagues (0.004)*** -0.016* -0.017*** -0.006*** 0.008*** Panel B. School Characteristics 0.009**** 0.019 0.089**** 0.017*** 0.007**** School Opened within the Past 3 Years 0.0001) (0.014) (0.005) (0.001) (0.001) (0.001) Percent of Non-White Students is Greater than or Equal to 50 Percent -0.016*** 0.008* -0.013*** -0.019**** Ob0011 (0.001) (0.008) (0.003) (0.001) (0.003) (0.001) Percent of Free or Reduced Lunch Students is above Yearly District Average -0.007*** -0.012** -0.008** -0.002*** -0.009*** (0.001) (0.008) (0.002) (0.002) (0.001) (0.008) (0.002) (0.002) Percent of Free or Reduced Lunch Students is above Yearly District Average -0.007**** 0.012*** -0.009**** -0.000		(0.001)	(0.007)	(0.002)	(0.002)	(0.001)
(0.01) (0.007) (0.002) (0.001) Quartile 4 (0.004) -0.016* -0.007*** -0.006*** (0.001) (0.003) (0.002) (0.001) Principal and Applicant were Colleagues (0.004) (0.008) (0.013) (0.005) Panel B. School Characteristics (0.004) (0.029** 0.019*** (0.012)** (0.007)*** School Opened within the Past 3 Years (0.001) (0.014) (0.003) (0.001) Percent of Non-White Students is Greater than or Equal to 50 Percent -0.016**** (0.001) (0.003) (0.001) Percent of Free or Reduced Lunch Students is above Yearly District Average -0.009*** -0.020* -0.003* -0.009*** (0.001) (0.001) (0.008) (0.002) (0.001) -0.003* -0.009*** Percent of Special Education Students is above Yearly District Average (0.001) (0.008) (0.002) (0.001) Percent of Gifted and Talented Students is above Yearly District Average (0.001) (0.008) (0.002) (0.002) Percent of Students Scoring Proficient or Higher o	Quartile 3	0.004***	-0.011	-0.011***	-0.002	0.007***
Quartile 4 0.004*** -0.016* -0.007*** -0.006*** 0.008*** Principal and Applicant were Colleagues (0.001) (0.008) (0.003) (0.002) (0.001) Principal and Applicant were Colleagues (0.004) (0.028) (0.013) (0.012) (0.005) Panel B. School Characteristics (0.001) (0.014) (0.005) (0.004) (0.001) School Opened within the Past 3 Years (0.001) (0.014) (0.005) (0.004) (0.001) Percent of Non-White Students is above Yearly District Average (0.001) (0.006) (0.003) (0.001) Percent of Special Education Students is above Yearly District Average -0.009*** -0.012** -0.009*** (0.001) (0.008) (0.003) (0.001) (0.008) (0.002) (0.001) Percent of Special Education Students is above Yearly District Average -0.007*** 0.012 -0.006** -0.009*** (0.001) (0.008) (0.002) (0.001) (0.002) (0.001) -0.006** -0.009*** Percent of Special Education Students i		(0.001)	(0.007)	(0.002)	(0.002)	(0.001)
(0.001) (0.008) (0.003) (0.002) (0.001) Principal and Applicant were Colleagues 0.093*** 0.019 0.089*** 0.0075*** 0.099*** Panel B. School Characteristics (0.001) (0.002) (0.013) (0.012) (0.005) School Opened within the Past 3 Years 0.009*** 0.029* 0.019*** 0.012*** 0.007*** School Characteristics (0.001) (0.004) (0.003) (0.001) (0.004) (0.001) Percent of Non-White Students is Greater than or Equal to 50 Percent -0.016*** 0.008 0.004 -0.022*** -0.019*** (0.001) (0.006) (0.003) (0.001) (0.001) (0.003) (0.001) Percent of Free or Reduced Lunch Students is above Yearly District Average -0.007*** 0.012 -0.003 -0.009*** (0.001) (0.008) (0.002) (0.001) (0.008) (0.002) (0.001) Percent of Gifted and Talented Students is above Yearly District Average 0.001*** 0.008 -0.007** -0.009*** (0.001) (0.002) (0.011) (0.002) (0.012) (0.001) 0.	Quartile 4	0.004***	-0.016*	-0.007**	-0.006**	0.008***
Principal and Applicant were Colleagues 0.093*** 0.019 0.089*** 0.075*** 0.099*** Panel B. School Characteristics 0.004 (0.028) (0.013) (0.012) (0.005) Parel B. School Characteristics 0.009*** 0.009*** 0.019*** 0.012*** 0.007*** Percent of Non-White Students is Greater than or Equal to 50 Percent -0.016*** 0.008 0.004 -0.022*** -0.019*** Percent of Free or Reduced Lunch Students is above Yearly District Average -0.009*** -0.020* -0.008* -0.013*** -0.009*** Percent of Special Education Students is above Yearly District Average -0.001** 0.012 -0.003 -0.009*** (0.001) (0.008) (0.002) (0.001) -0.006* -0.009*** (0.001) (0.008) (0.002) (0.001) -0.006* -0.009*** (0.001) (0.008) (0.002) (0.001) (0.008) (0.002) (0.001) Percent of Students Scoring Proficient or Higher on Current Year Standardized		(0.001)	(0.008)	(0.003)	(0.002)	(0.001)
(0.004) (0.028) (0.013) (0.012) (0.005) Panel B. School Characteristics	Principal and Applicant were Colleagues	0.093***	0.019	0.089***	0.075***	0.099***
Panel B. School CharacteristicsSchool Opened within the Past 3 Years 0.009^{***} 0.029^* 0.019^{***} 0.019^{***} 0.007^{***} School Characteristics (0.001) (0.014) (0.005) (0.004) (0.001) Percent of Non-White Students is Greater than or Equal to 50 Percent -0.016^{***} 0.008 0.004 -0.022^{***} -0.019^{****} Percent of Free or Reduced Lunch Students is above Yearly District Average -0.009^{***} -0.008^* -0.008^* -0.008^* -0.009^{***} Percent of Special Education Students is above Yearly District Average 0.001 (0.008) (0.003) (0.001) Percent of Gifted and Talented Students is above Yearly District Average (0.001) (0.008) (0.002) (0.002) Percent of Students Scoring Proficient or Higher on Current Year Standardized (0.001) (0.008) (0.003) (0.003) (0.001) Percent of Chronically Absent Students is above Yearly District Average 0.010^{***} 0.002^* 0.004^* 0.007^* 0.012^{***} (0.001) (0.008) (0.003) (0.003) (0.001) (0.008) (0.003) (0.001) Percent of Chronically Absent Students is above Yearly District Average 0.010^{***} 0.007^* 0.012^{***} 0.012^{***} (0.001) (0.008) (0.003) (0.001) (0.008) (0.003) (0.001) (0.003) (0.001) Percent of Students is above Yearly District Average 0.010^{***} 0.007^* 0.012^{***} <td></td> <td>(0.004)</td> <td>(0.028)</td> <td>(0.013)</td> <td>(0.012)</td> <td>(0.005)</td>		(0.004)	(0.028)	(0.013)	(0.012)	(0.005)
School Opened within the Past 3 Years 0.009*** 0.009*** 0.012** 0.0012** 0.0012** Percent of Non-White Students is Greater than or Equal to 50 Percent 0.001 (0.001) (0.003) (0.003) (0.001) Percent of Non-White Students is above Yearly District Average 0.009*** -0.020* -0.008* -0.013*** -0.009*** Percent of Special Education Students is above Yearly District Average -0.009*** -0.020* -0.008* -0.013*** -0.009*** Percent of Special Education Students is above Yearly District Average -0.007*** 0.012 -0.003 -0.009*** Percent of Gifted and Talented Students is above Yearly District Average 0.004* 0.048*** 0.011+ 0.041*** -0.009*** Percent of Students Scoring Proficient or Higher on Current Year Standardized (0.001) (0.008) (0.003) (0.001) Percent of Chronically Absent Students is above Yearly District Average 0.010*** 0.002*** 0.002*** 0.012*** 0.012*** 0.012*** 0.012*** 0.012*** 0.012*** 0.012*** 0.012*** 0.012*** 0.012*** 0.009*** 0.002* 0.000* 0.000* 0.000* 0.000*	Panel B. School Characteristics		0.000	0.010444	0.040	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	School Opened within the Past 3 Years	0.009***	0.029*	0.019***	0.012**	0.007***
Percent of Non-White Students is Greater than or Equal to 50 Percent -0.016^{***} 0.008 0.004 -0.022^{***} -0.019^{***} (0.001)(0.001)(0.003)(0.003)(0.003)(0.001)Percent of Free or Reduced Lunch Students is above Yearly District Average -0.009^{***} -0.02^{***} -0.008^{**} -0.003^{*} -0.013^{***} -0.009^{***} (0.001)(0.001)(0.008)(0.003)(0.003)(0.003)(0.001)Percent of Special Education Students is above Yearly District Average -0.007^{***} 0.012 -0.003 -0.006^{***} -0.009^{***} (0.001)(0.001)(0.008)(0.002)(0.002)(0.001)(0.007)(0.002)(0.001)Percent of Gifted and Talented Students is above Yearly District Average 0.004^{**} 0.048^{***} 0.011^{***} -0.009^{***} (0.001)(0.001)(0.008)(0.007)(0.012)(0.007)(0.002)Percent of Students Scoring Proficient or Higher on Current Year Standardized -0.005^{***} 0.022^{**} 0.004^{**} 0.012^{***} 0.012^{***} Tests for Accountability is above Yearly District Average 0.010^{***} 0.002^{**} 0.003^{*} 0.001^{**} 0.012^{***} 0.012^{***} Quartile 1 (Schools Closest to Home) 0.134^{***} 0.087^{***} 0.066^{***} 0.021^{***} 0.011^{***} 0.003^{***} Quartile 2 0.060^{***} 0.042^{*} 0.037^{**} 0.066^{***} 0.061^{****} Quartile 3		(0.001)	(0.014)	(0.005)	(0.004)	(0.001)
	Percent of Non-White Students is Greater than or Equal to 50 Percent	-0.016***	0.008	0.004	-0.022***	-0.019***
Percent of Free or Reduced Lunch Students is above Yearly District Average -0.009^{***} -0.002^{**} -0.008^{**} -0.013^{***} -0.009^{***} Percent of Special Education Students is above Yearly District Average -0.007^{***} 0.012 -0.003 -0.006^{**} -0.009^{***} Percent of Gifted and Talented Students is above Yearly District Average 0.001^{**} 0.002^{*} 0.002^{*} 0.000^{*} -0.009^{***} Percent of Students Scoring Proficient or Higher on Current Year Standardized 0.004^{***} 0.004^{***} 0.011^{*} 0.009^{***} 0.002^{***} Tests for Accountability is above Yearly District Average 0.010^{***} 0.008^{***} 0.012^{***} 0.012^{***} 0.012^{***} Percent of Chronically Absent Students is above Yearly District Average 0.001^{***} 0.008^{***} 0.004^{*} 0.004^{***} 0.007^{**} 0.012^{***} Quartile 1 (Schools Closest to Home) 0.134^{***} 0.003^{***} 0.022^{***} 0.004^{****} 0.027^{***} 0.141^{****} Quartile 2 0.060^{***} 0.042^{**} 0.07^{***} 0.127^{***} 0.141^{****} Quartile 3 0.021^{***} 0.034^{**} 0.020^{***} 0.003^{***} 0.029^{***} Quartile 3 0.021^{***} 0.034^{**} 0.029^{***} 0.023^{***} 0.023^{***} Quartile 3 0.021^{***} 0.034^{**} 0.021^{***} 0.023^{***} 0.023^{***} Quartile 3 0.021^{***} 0.034^{**} 0.021^{***} 0.023^{***} </td <td></td> <td>(0.001)</td> <td>(0.006)</td> <td>(0.003)</td> <td>(0.003)</td> <td>(0.001)</td>		(0.001)	(0.006)	(0.003)	(0.003)	(0.001)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Percent of Free or Reduced Lunch Students is above Yearly District Average	-0.009***	-0.020*	-0.008*	-0.013***	-0.009***
Percent of Special Education Students is above Yearly District Average -0.007^{***} 0.012 -0.003 -0.006^{**} -0.009^{***} (0.001)(0.001)(0.002)(0.002)(0.002)(0.001)Percent of Gifted and Talented Students is above Yearly District Average 0.004^{*} 0.048^{***} $0.011+$ 0.041^{***} -0.009^{***} Percent of Students Scoring Proficient or Higher on Current Year Standardized 0.002 (0.002) (0.007) (0.006) (0.002) Percent of Chronically Absent Students is above Yearly District Average 0.010^{***} 0.008 -0.007^{*} 0.012^{***} 0.012^{***} Quartile 1 (Schools Closest to Home) 0.134^{***} 0.087^{***} 0.096^{***} 0.127^{***} 0.141^{***} Quartile 2 0.003 0.001 0.001 0.004^{**} 0.004^{**} 0.022^{**} 0.066^{***} 0.061^{***} Quartile 3 0.002 0.017 0.012^{***} 0.001^{***} 0.022^{***} 0.004^{***} 0.007^{***} 0.127^{***} Quartile 3 0.002^{***} 0.003^{***} 0.022^{***} 0.004^{***} 0.006^{***} 0.021^{***} Quartile 3 0.021^{***} 0.021^{***} 0.002^{***} 0.002^{***} 0.022^{***} 0.143^{***} 0.034^{**} 0.002^{***} 0.023^{***} 0.023^{***} 0.003^{***} 0.021^{***} 0.003^{***} 0.023^{***} 0.023^{***} 0.003^{***} 0.021^{***} 0.034^{**} 0.002^{***} 0.02		(0.001)	(0.008)	(0.003)	(0.003)	(0.001)
	Percent of Special Education Students is above Yearly District Average	-0.007***	0.012	-0.003	-0.006**	-0.009***
Percent of Gitted and Talented Students is above Yearly District Average 0.004^* 0.048^{***} $0.011+$ 0.041^{***} -0.009^{***} (0.002) (0.012) (0.007) (0.006) (0.002) Percent of Students Scoring Proficient or Higher on Current Year Standardized (0.001^*) 0.008 -0.007^* 0.012^{***} 0.012^{***} Tests for Accountability is above Yearly District Average 0.010^{***} 0.008 -0.007^* 0.012^{***} 0.012^{***} Percent of Chronically Absent Students is above Yearly District Average -0.005^{***} 0.022^{**} 0.004 0.007^* -0.011^{***} Quartile 1 (Schools Closest to Home) 0.134^{***} 0.087^{***} 0.096^{***} 0.127^{***} 0.141^{***} Quartile 2 0.060^{***} 0.042^* 0.037^* 0.066^{***} 0.061^{***} Quartile 3 0.021^{***} 0.022^* 0.007^* 0.023^{***} Quartile 3 0.021^{***} 0.034^* 0.002^* 0.007^* 0.023^{***} Quartile 3 0.021^{***} 0.034^* 0.002^* 0.023^{***} 0.023^{***} (0.002) (0.017) (0.011) (0.005) (0.002) Constant 0.143^{***} 0.341^{**} 0.135^{***} 0.135^{***}		(0.001)	(0.008)	(0.002)	(0.002)	(0.001)
(0.002) (0.012) (0.007) (0.006) (0.002) Percent of Students Scoring Proficient or Higher on Current Year Standardized	Percent of Gifted and Talented Students is above Yearly District Average	0.004*	0.048***	0.011+	0.041***	-0.009***
Percent of Students Scoring Protected of Higher on Current Year Standardized Tests for Accountability is above Yearly District Average 0.010*** 0.008 -0.007* 0.012*** 0.012*** (0.001) (0.008) (0.003) (0.003) (0.001) Percent of Chronically Absent Students is above Yearly District Average -0.005*** 0.022** 0.004 0.007* -0.011*** (0.001) (0.008) (0.004) (0.003) (0.001) Distance from Home to School on Transfer Application (Miles) 0.134*** 0.087*** 0.096*** 0.127*** 0.141*** Quartile 1 (Schools Closest to Home) 0.134*** 0.087*** 0.096*** 0.127*** 0.141*** Quartile 2 0.060*** 0.042* 0.037* 0.066*** 0.061*** Quartile 3 0.021*** 0.034* 0.002 0.029*** 0.023** Quartile 3 0.021*** 0.341** 0.184*** 0.135*** 0.135*** Constant 0.143*** 0.341** 0.184*** 0.135*** 0.135***		(0.002)	(0.012)	(0.007)	(0.006)	(0.002)
Tests for Accountability is above Yearly District Average 0.010^{4444} 0.008 -0.007^{444} 0.012^{4444} 0.012^{4444} Percent of Chronically Absent Students is above Yearly District Average -0.005^{***} 0.022^{**} 0.004 0.007^{*} -0.011^{***} Percent of Chronically Absent Students is above Yearly District Average -0.005^{***} 0.022^{**} 0.004 0.007^{*} -0.011^{***} Percent of Chronically Absent Students is above Yearly District Average -0.005^{***} 0.022^{**} 0.004 0.007^{*} -0.011^{***} Purcent of Chronically Absent Students is above Yearly District Average 0.012^{***} 0.022^{**} 0.004 0.007^{*} -0.011^{***} Purcent of Chronically Absent Students is above Yearly District Average 0.012^{***} 0.022^{**} 0.004 0.007^{*} -0.011^{***} Purcent of Chronically Absent Students is above Yearly District Average 0.134^{***} 0.022^{**} 0.004 0.007^{*} -0.011^{***} Purcent of Chronically Absent Students is above Yearly District Average 0.134^{***} 0.087^{***} 0.096^{***} 0.127^{***} 0.141^{***} Quartile 1 (Schools Closest to Home) 0.134^{***} 0.042^{*} 0.037^{**} 0.066^{***} 0.061^{***} Quartile 2 0.060^{***} 0.042^{*} 0.037^{**} 0.066^{***} 0.061^{***} Quartile 3 0.021^{***} 0.034^{*} 0.002 0.029^{***} 0.023^{***} Purcent 4 0.002 0.017 0.039 0.025	Tests for A security life is above Versely District Assesses	0.010***	0.000	0.007*	0.012***	0.012***
Percent of Chronically Absent Students is above Yearly District Average -0.005*** 0.022** 0.004 0.007* -0.011*** (0.001) (0.001) (0.003) (0.004) (0.003) (0.001) Distance from Home to School on Transfer Application (Miles) 0.134*** 0.087*** 0.096*** 0.127*** 0.141*** Quartile 1 (Schools Closest to Home) 0.134*** 0.0025 (0.013) (0.008) (0.003) Quartile 2 0.060*** 0.042* 0.037** 0.066*** 0.061*** Quartile 3 0.021*** 0.034* 0.002 0.029*** 0.023*** (0.002) (0.017) (0.011) (0.005) (0.002) Constant 0.143*** 0.341** 0.184*** 0.135*** (0.011) (0.129) (0.039) (0.025) (0.011)	Tests for Accountability is above Yearry District Average	0.010***	0.008	-0.00/*	0.012***	0.012***
Percent of Chronically Absent Students is above Yearly District Average -0.005 *** 0.022** 0.004 0.007* -0.011*** (0.001) (0.008) (0.004) (0.003) (0.001) Distance from Home to School on Transfer Application (Miles) 0.134*** 0.087*** 0.096*** 0.127*** 0.141*** Quartile 1 (Schools Closest to Home) 0.134*** 0.060*** 0.042* 0.037** 0.066*** 0.061*** Quartile 2 0.060*** 0.042* 0.037** 0.066*** 0.061*** Quartile 3 0.021*** 0.034* 0.002 0.029*** 0.023*** (0.002) (0.017) (0.011) (0.005) (0.002) Constant 0.143*** 0.341** 0.184*** 0.135*** (0.011) (0.129) (0.039) (0.025) (0.011)	Demonst of Chronically, Abcont Students is above Vearly District Average	(0.001)	(0.008)	(0.003)	(0.003)	(0.001)
(0.001) (0.003) (0.004) (0.003) (0.004) Distance from Home to School on Transfer Application (Miles) Quartile 1 (Schools Closest to Home) 0.134*** 0.087*** 0.096*** 0.127*** 0.141*** Quartile 2 0.060*** 0.042* 0.037** 0.066*** 0.061*** Quartile 3 0.021*** 0.034* 0.002 0.029*** 0.023*** (0.002) (0.017) (0.011) (0.005) (0.002) Constant 0.143*** 0.341** 0.184*** 0.135*** (0.011) (0.129) (0.025) (0.011)	referent of Chromeany Absent Students is above Tearry District Average	-0.003^{+++}	(0.022^{**})	0.004	$(0.00)^{+}$	-0.011^{+++}
Quartile 1 (Schools Closest to Home) 0.134*** 0.087*** 0.096*** 0.127*** 0.141*** Quartile 2 0.003) (0.025) (0.013) (0.008) (0.003) Quartile 3 0.060*** 0.042* 0.037** 0.066*** 0.061*** Quartile 3 0.021*** 0.034* 0.002 0.029*** 0.023*** Constant 0.143*** 0.341** 0.184*** 0.135*** 0.141***	Distance from Home to School on Transfer Application (Miles)	(0.001)	(0.008)	(0.004)	(0.003)	(0.001)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Ouartile 1 (Schools Closest to Home)	0 134***	0.087***	0 096***	0 127***	0 141***
Quartile 2 $(0.002)^{\circ}$ $(0.012)^{\circ}$ $(0.003)^{\circ}$ $(0.002)^{\circ}$ $(0.011)^{\circ}$ $(0.002)^{\circ}$ $(0.011)^{\circ}$ $(0.002)^{\circ}$ $(0.011)^{\circ}$ $(0.025)^{\circ}$ $(0.025)^{\circ}$ $(0.025)^{\circ}$ $(0.025)^{\circ}$ $(0.025)^{\circ}$ (0.025)		(0.003)	(0.025)	(0.013)	(0.008)	(0.003)
Quartile 3 (0.003) (0.019) (0.012) (0.007) (0.003) Quartile 3 0.021^{***} 0.034^{*} 0.002 0.029^{***} 0.023^{***} (0.002) (0.017) (0.011) (0.005) (0.002) Constant 0.143^{***} 0.341^{**} 0.184^{***} 0.135^{***} (0.011) (0.129) (0.039) (0.025) (0.011)	Quartile 2	0.060***	0.042*	0.037**	0.066***	0.061***
Quartile 3 0.021^{**} 0.034^{*} 0.002 0.029^{**} 0.023^{**} 0.021^{**} 0.021^{**} 0.002 0.011 0.029^{**} 0.023^{**} 0.002 (0.017) (0.011) (0.005) (0.002) Constant 0.143^{***} 0.341^{**} 0.184^{***} 0.135^{***} (0.011) (0.129) (0.039) (0.025) (0.011)	((0.003)	(0.019)	(0.012)	(0.007)	(0.003)
(0.002)(0.017)(0.011)(0.005)(0.002)Constant0.143***0.341**0.184***0.135***0.135***(0.011)(0.129)(0.039)(0.025)(0.011)	Quartile 3	0.021***	0.034*	0.002	0.029***	0.023***
Constant0.143***0.341**0.184***0.135***0.135***(0.011)(0.129)(0.039)(0.025)(0.011)		(0.002)	(0.017)	(0.011)	(0.005)	(0.002)
$(0.011) \qquad (0.129) \qquad (0.039) \qquad (0.025) \qquad (0.011)$	Constant	0.143***	0.341**	0.184***	0.135***	0.135***
		(0.011)	(0.129)	(0.039)	(0.025)	(0.011)
R-Squared 0.043 0.095 0.028 0.050 0.049	R-Squared	0.043	0.095	0.028	0.050	0.049
Observations	Observations					
Applicant-Year-Request 1,453,826 18,892 169,382 191,455 991,271	Applicant-Year-Request	1,453,826	18,892	169,382	191,455	991,271
Applicant-Year 13,363 217 1,675 1,874 8,878	Applicant-Year	13,363	217	1,675	1,874	8,878
Applicant 7,271 133 835 989 4,896	Applicant	7,271	133	835	989	4,896
Mean Outcome 0.106 0.122 0.113 0.112 0.105	Mean Outcome	0.106	0.122	0.113	0.112	0.105

Note: The unit of observation is the applicant-year-request. The outcome equals 1 if the teacher requested the school on the Transfer Application, 0 otherwise. See Table 4 notes for description of analysis parameters. Asterisks denote statistical significance: +0.10 *p < 0.05, **p < 0.01, ***p < 0.001.