Should I Stay or Should I Go (Later)? Teacher Intentions and Turnover in Low-Performing Schools and Districts Before and During the COVID-19 Pandemic

Erica Harbatkin
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Erica Harbatkin
Florida State University

Tuan Nguyen
University of Missouri

Katharine O. Strunk
University of Pennsylvania
CALDER

Jason Burns
Education Policy Innovation Collaborative at Michigan State University

Alex Moran
Florida State University

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Abstract

Teacher turnover is a perennial concern, especially in low-performing, high-poverty schools. While districts and schools may try to anticipate and mitigate turnover by surveying teachers about their future plans, existing research on whether teacher-reported intent is predictive of actual turnover behavior is mixed. Using unique survey data from teachers in 35 low-performing, high-poverty districts in Michigan linked at the teacher level to statewide administrative data, we are able to measure turnover behavior one, two, and three years following reported intent. We find that intent is a significant predictor of turnover and becomes increasingly predictive over time. We also find organizational commitment and school organizational conditions are important factors in teachers' intent and, to a lesser degree, actual turnover behavior.

1. Introduction

Teacher turnover is a persistent challenge for policymakers and educational leaders, especially in high-poverty, low-achieving schools where a stable teacher workforce is central to school improvement. In particular, teacher mobility elicits two parallel pursuits—curtailing turnover when possible and hiring and training replacements when vacancies do arise. Thus, the ability to anticipate potential and eventual teacher departures before they occur could provide an avenue to address both of these objectives.

One way to anticipate turnover is to survey teachers about their coming plans, but research on the extent to which these surveys yield valuable information about eventual turnover is mixed (Bettini et al. 2020; DeAngelis, Wall, and Che 2013; Ladd 2011; Nguyen et al. 2022). For example, while some studies have found that teacher reports of intent to leave are meaningfully predictive of actual departure (DeAngelis, Wall, and Che 2013; Gersten et al. 2001; Nguyen et al. 2022), others found that intent carries very little signal about behavior (Boe, Barkanic, and Leow 1999; Grant and Brantlinger 2023; Ladd 2011). However, these studies typically examine turnover behavior about a year following intent, and cannot track teachers' eventual departure over time. To the extent that behavior may lag more than a year behind intent, existing research will understate the relationship.

Further, teacher reports of intent to leave surged during the COVID-19 pandemic. For example, 55% of educators in the 2021-22 school year reported they were thinking about leaving education sooner rather than later (Walker 2022). Researchers in several states then documented increasing turnover after 2021-22—including to a nearly 40-year high in Washington state (Bacher-Hicks, Chi, and Orellana 2022; Bastian and Fuller 2023; Camp, Zamarro, and McGee 2023; Goldhaber and Theobald 2023; Hopkins, Strunk, and Rogers 2023). Rising turnover disproportionately burdens high-poverty, low-performing schools, which consistently experience

more teacher mobility than more affluent schools and experience greater challenges filling resulting vacancies (Atteberry, Loeb, and Wyckoff 2016; Boyd et al. 2008; Guarino, Santibanez, and Daley 2006). However, many of these upturns came on the heels of especially low turnover as educators waited out the pandemic (Strunk et al. 2021). Thus, while these reports have raised the possibility of an unprecedented wave of teacher turnover, it is possible that the pandemic obscured the relationship between intended turnover and actual behavior.

In sum, unpacking whether intended turnover is a meaningful signal of *eventual* turnover behavior—especially in a pandemic era setting—would help to fill a critical gap in our understanding of the relationship between intent and turnover in a contemporary context. Further, understanding the factors that contribute to intended and actual teacher mobility can inform policy and practice to avert eventual turnover behavior. One set of malleable factors related to teacher mobility is school organizational conditions (Geiger and Pivovarova 2018; Ingersoll 2001; Ladd 2011; Viano et al. 2021). This is particularly salient in a post-pandemic context as teachers nationally reported worse well-being (including job stress, burnout, and depression) than other adults during the pandemic, and more negative reports of well-being and working conditions were associated with greater intentions to leave their positions (Steiner et al. 2022; Steiner and Woo 2021). The importance of these factors for teacher retention is especially critical in high-poverty, low-performing schools, where insufficient resources may contribute to poor working conditions (Johnson, Kraft, and Papay 2012; Johnston 2020; Kraft et al. 2015; Kraft, Simon, and Lyon 2021; Papay et al. 2017).

In this paper, we draw from unique teacher survey data from the lowest achieving districts in Michigan linked to statewide administrative data, two years before to two years after the onset of the pandemic, to examine the extent to which teacher-reported intent to leave

predicts whether and when teachers actually leave their jobs. We examine this relationship through an organizational science lens, which posits that teacher characteristics, work environment, organizational commitment, and alternative employment opportunities influence teacher intentions and behaviors. Our unique dataset has multiple measures of these important factors. By linking survey and administrative data at the teacher level, we are able to provide the first evidence from any time period on the extent to which teacher-reported intent predicts *eventual* turnover up to three years in the future. We then explore the factors that contribute to both intent to leave and actual turnover behavior. We examine these issues in the context of low-performing schools and districts undergoing turnaround as part of a statewide intervention under the Every Student Succeeds Act (ESSA, 2015). We ask:

1. To what extent are teachers' expressed intentions to turn over associated with their actual turnover behavior immediately and in later years?
2. Are there differences in this relationship before and during the COVID-19 pandemic?
3. What teacher and school characteristics predict teachers' stated intent to turn over, and do these factors differ from those that predict actual turnover behavior?

We find that intent to turn over is a meaningful signal of eventual turnover behavior and becomes more predictive of eventual turnover two and three years later. The first pandemic year temporarily muddled the relationship between turnover intent and behavior, but the relationship rebounded in 2020-21 and 2021-22 when teachers reporting plans to transfer were nearly 20 percentage points more likely to transfer than their peers reporting plans to stay, even after controlling for a robust set of covariates and school fixed effects. The relationship between intent to leave education or retire and actual behavior returned to pre-pandemic levels a year later, in 2021-22. We find that the most consistent predictors of intent and actual turnover behavior in

low-performing districts are organizational conditions, including school leadership, school climate, and school safety.

2. Conceptual Framework and Literature Review

The organizational sciences literature shows that intent and behavior are partially overlapping constructs driven by distinct factors (Kirschenbaum and Weisberg 1990). Our framework for examining intent and turnover, presented in Figure 1, is guided by this literature, which posits that intent to quit is a significant predictor of actual behavior across a wide variety of professions in both the public and private sectors (Cho and Lewis 2012; Griffeth, Hom, and Gaertner 2000). However, the extent to which intent is predictive of behavior appears to depend on a variety of factors and in some cases is only a weak predictor (Cho and Lewis 2012; Cohen, Blake, and Goodman 2016; Limbocker and Richardson 2023). This is because employee characteristics, working conditions, organizational commitment, and alternative employment opportunities may complicate the relationship between intent and turnover (Griffeth, Hom, and Gaertner 2000; Kirschenbaum and Weisberg 1990) and because intention is measured in many different ways across surveys (Grant and Brantlinger 2023; Nguyen et al. 2022).

We posit that individual teacher characteristics, work environment, organizational commitment, and alternative employment opportunities influence teachers' withdrawal behaviors and cognitions. In our study, we focus specifically on malleable policy-relevant factors associated with teacher intentions and turnover, including dimensions of the work environment, such as climate, safety, leadership, and job resources, (Billingsley and Bettini 2019; Finnigan and Stewart 2009; Harbatkin, Burns, and Cullum 2023; Henry and Harbatkin 2019; Kim 2017; Kraft, Marinell, and Shen-Wei Yee 2016; Ladd 2011) and organizational commitment (Datnow 2000; Dunaway, Kim, and Szad 2012). Finally, to understand the potential moderating influence of alternative employment opportunities (Chingos and West 2012; Podgursky, Monroe, and

Watson 2004), we explore two dimensions that might contribute to teacher employment decisions. The first is teacher licensure endorsement data, which allows us to understand whether the relationship between intent and behavior is different for subject areas (e.g., STEM, special education) that tend to have greater or fewer job opportunities (Billingsley and Bettini 2019; Goldhaber, Falken, and Theobald 2023). The second is based on the teacher labor market's responsiveness to economic shifts (Ersoy 2020; Rucinski 2023). Specifically, we examine differences by county-level unemployment, which offers a measure of the broader economic context in which teachers are carrying out these decisions.

Though we cannot measure withdrawal behaviors (gray text in second box of Figure 1), we can measure withdrawal cognition using reported teacher intent, which is both predictive of actual turnover behavior and is associated with perceptions of work environment (Doan et al. 2023; Nguyen et al. 2022; Steiner et al. 2022). While the factors in the top-left box may also have a direct relationship with behavior, the relationship between these factors and actual behavior is more distal than their relationship with intent. However, to the extent that these factors are positively associated with withdrawal cognition (i.e., reported intent, in our case) and withdrawal cognition predicts actual turnover behavior, including withdrawal cognition in the model may help to explain the process through which teachers ultimately leave their positions (Bluedorn 1982; Mobley, Horner, and Hollingsworth 1978; Nguyen et al. 2022). From this broad organizational lens, we next focus on the turnover intention and actual turnover for teachers specifically, a subset of public sector employees for whom the relationship between intent and behavior might vary.

2.1 Teacher Turnover Intent

Research has examined intentions for several reasons. First, many researchers and policymakers rely on teacher intentions because they lack a direct measure of teacher turnover due to delays in data availability (particularly at the national level), data privacy concerns, and the expense of collecting accurate turnover data (Gersten et al., 2001). Second, as described above, previous research has demonstrated that employee intention is predictive of behavior (Mobley et al, 1978; Steel & Ovalle, 1984), and the empirical link between intent and behavior exists in many professions, including education (Harrison, Newman, and Roth 2006). Third, stated intentions to leave signal teachers' dissatisfaction, stress and burnout, which—regardless of ultimate turnover behavior—have implications for teaching and learning and are particularly meaningful in the current climate of teacher shortages and the ongoing pandemic (Madigan and Kim 2021).

Despite the ubiquity of research on teacher intentions, few studies in the education context have examined the association between teacher intentions and actual behaviors. In the study most similar to ours, using survey data linked to statewide administrative data in North Carolina, Ladd (2011) found that school-level intended and actual departure rates were correlated but the correlation was not especially strong. Notably, the most consistent predictor of both intended and actual schoolwide departures was teacher-reported perception of school leadership—underscoring that teacher surveys provide meaningful signal about teacher mobility (Ladd 2011).

However, this study had three key limitations that we build on here—the survey asked broadly about career intentions rather than specific intent for the following year, it was only able to link a single year of intent and turnover data, and it drew on school- rather than teacher-level measures.

Some other studies have examined teacher-level intentions and behaviors, with limitations and mixed findings. Three found that intent could be moderately to highly predictive of actual turnover behavior (DeAngelis, Wall, and Che 2013; Gersten et al. 2001; Nguyen et al. 2022). In particular, drawing specifically on a sample of first-year teachers, DeAngelis and colleagues (2013) found that reported plans to change schools were highly predictive of actual transfer, though plans to leave education were only moderately predictive after one year. In a smaller-scale study examining special education teachers, Morvant and Gersten (1995) found that nearly half of the 23 teachers they observed who expressed intent to leave "as soon as possible" did so within 15 months. Of the 33 teachers in their sample who actually left, about two-thirds had expressed an intent to do so either as soon as possible, in a few years, or until nearby retirement (Morvant and Gersten 1995). These findings point to the possibility that intent and behavior might be particularly aligned in special education—an area with more job opportunities than some others (Goldhaber, Falken, and Theobald 2023; Mason-Williams et al. 2020). On the national level, a recent study drawing on the SASS data found that intentions were moderately predictive of turnover but that measures of intent were distinct from actual turnover behaviors, with about one-third of teachers who intended to leave actually leaving the next year. Moreover, they found that different reported intentions were differently predictive; specifically, intent-to-leave and think-about-transferring were most predictive of actual turnover, while intent-to-stay was only weakly predictive of turnover (Nguyen et al. 2022).

Other research found weaker associations between teacher intent and behavior (Boe, Barkanic, and Leow 1999; Grant and Brantlinger 2023). A study using an earlier iteration of the SASS found that from 1987 to 1995, only 15% of teachers who voluntarily left had expressed an intent to do so six months prior (Boe, Barkanic, and Leow 1999). In more recent work focused

on New York City Teaching Fellows-prepared secondary math teachers, Grant and Brantlinger (2023) also found a weak relationship between preservice intention and tenure in teaching for NYC Teaching Fellows secondary math teachers in 2006 and 2007.

These findings may differ from one another for several reasons, including geographic context, how and when intent was measured, and career stage and focus area of teachers. There are also several limitations, including the fact that intentions as measured by the SASS may not accurately capture true intent due to the ways teachers may interpret the response choices [for instance, teachers may not interpret the response option "as long as I am able" as a long-term commitment to the teaching profession; see Bettini et al., (2020)], or that studies often only measure teacher mobility in the year following reported intent but not for subsequent years, or that the data these studies draw on may be outdated. This latter limitation is particularly critical as it severely limits what we know about how the pandemic may have influenced the relationship between intent and turnover. Another limitation is inability to observe turnover over a longer time period, as it may take years for teachers to be able to switch careers or even schools. Finally, these studies do not examine low-performing turnaround contexts where teacher mobility is especially high and where turnover could have some of the most damaging effects on student outcomes. Our work helps to fill these gaps, particularly for low-performing schools and districts and in the pandemic era. Our focus on malleable organizational factors (i.e., organizational conditions and commitment) provides a substantial contribution for policy and practice, particular for schools where turnover is a constant concern.

2.2 The Importance and Costs of Turnover in Low-Performing Schools and Districts

Teacher turnover is costly, in terms of student achievement and monetary costs of replacing a teacher. One study found that the average cost to replace an individual teacher can

reach $20,000 (DeFeo et al. 2017), and this may be a conservative estimate because it does not account for substantial indirect costs of turnover to schools and students, in particular reduced teacher quality and decreased student achievement (Sorensen and Ladd 2020; Synar and Maiden 2012).

Costs may be particularly acute in low-performing schools and districts such as those in our study sample. Teacher retention has been consistently more challenging in traditionally disadvantaged schools, especially low-performing schools (Boyd et al. 2005; Nguyen et al. 2020; Sass et al. 2012). In particular, prior works have suggested that teachers leave these schools because social disinvestment in low-income communities, especially communities of color, has damaged working conditions for educators teaching in these contexts (Simon and Johnson 2015). Working conditions such as school leadership, collegial relationships, school climate and culture, administrative support, teacher collaboration, salary, and class size, may be especially unfavorable in low-performing schools, influencing teachers' decisions about whether and where to teach (Hanushek, Kain, and Rivkin 2004; Ladd 2011; Lovison and Mo 2022; Simon and Johnson 2015; Sun 2018; Viano et al. 2021). Moreover, accountability systems broadly, and turnaround status in particular, may lead to higher rates of teacher turnover in low-performing schools and districts, undermining improvement efforts (Clotfelter et al. 2004; Harbatkin, Strunk, and McIlwain 2023; Henry et al. 2020; Henry and Harbatkin 2020). Finally, recruiting highly effective teachers is especially difficult in low-performing schools and districts; thus, retaining existing talent in the school building is especially critical (Engel, Jacob, and Curran 2014; Harbatkin 2022).

3. Sample, Data, and Methods

3.1 Sample and Data

Our study is set against the backdrop of the 35 lowest performing districts in Michigan. These districts were identified as "Partnership districts" in 2016-17 and 2017-18 as part of the state's efforts to turn around its lowest performing schools and districts. Under the Partnership Model, the Michigan Department of Education (MDE) identified the lowest performing schools in the state as Partnership schools. The districts operating those schools were classified as Partnership districts and charged with improving student outcomes in identified schools. Partnership districts experienced much higher rates of teacher turnover than other districts—a pattern that predated the Partnership Model and has persisted throughout the intervention—and district leaders consistently cited staffing as a key challenge to successful turnaround (Burns et al. 2023; Harbatkin et al. 2023). In total, these districts represent about 4% of the districts in Michigan, but serve 10% of the state's students, 15% of the state's economically disadvantaged students, and one-third of the state's Black students.

To examine the relationship between teacher intentions and behavior and their predictors in high-needs, low-performing turnaround districts, we draw on statewide administrative data from the Michigan Department of Education (MDE) and the Center for Educational Performance and Information (CEPI) merged at the teacher level with teacher survey data from the 35 low-performing districts slated for turnaround under the Partnership Model. Survey data come from a teacher survey conducted as part of a larger evaluation of the Partnership Model, administered to all teachers in Partnership districts in two pre-pandemic (fall 2018 and 2019) and two pandemic years (spring 2021 and 2022). Our sample comprises all teachers in Partnership districts for whom we have survey data from 2018-19 through 2021-22. In total, there were 19,249 teacher-years in 35 Partnership districts during the study period.

We merge the administrative and survey data and restrict the analytic dataset to the 7,714 Partnership district teachers whose job assignment was at least 25% teaching[1] and for whom we have relevant survey data, or 40% of teacher-year observations across 1,119 school-years and 114 district-years.[2] The teacher coverage rates in our full analytic dataset are 38% in the first year, 49% in the second, 39% in the third, and 30% in the fourth. When we restrict the sample to just those teachers for whom we have construct data representing school organizational conditions, we include 6,192 teachers across 1,034 school-years and 98 district-years, with teacher coverage rates of 25% in the first year, 34% in the second, 39% in the third, and 30% in the fourth. We have also tested the robustness of the regression models against a larger sample that does not exclude teachers for whom we have no data on a given construct. Relative to the full population of teachers, survey respondents were more likely to be White and female, though differences were small (all less than .05 SDU) after accounting for school fixed effects, which we include in our regressions predicting behavior as a function of intent. Appendix A provides balance tests showing respondent and nonrespondent differences descriptively (A-1) and then with school fixed effects (A-2), followed by unweighted and weighted sample descriptives relative to the Partnership district teacher population (A-3).

To account for observable differences between respondents and nonrespondents, we calculate inverse probability weights within each year using teacher demographics (race/ethnicity, gender), certification type (i.e., elementary, secondary), experience in the district, and school fixed effects. Still, we suggest caution in generalizing findings to the full population of teachers in Partnership districts, though our balance tests in Appendix A (Table A-2, with

[1] We also tested other definitions of teacher, including 50% and 100% FTE teaching assignments. Findings were not sensitive to these differences so we used the most inclusive definition of teacher.
[2] One district-year is a unique observation for a particular district in a particular year. For instance, if we observe 20 districts in year one and 20 districts in year two, we would have 40 district-year observations in the sample.

school fixed effects) suggest findings using our weights may be reasonably generalized to *schools* in Partnership districts.

It is important to note that our weighting procedure adjusts only for observable differences between respondents and nonrespondents, and would not account for differences driven by unobservable characteristics. For example, nonresponse could reflect a withdrawal behavior (i.e., top of second box in our conceptual framework). If that were the case, our sample of respondents may report more positive perceptions of school organizational conditions and commitment, on average, than the target population. On the other hand, teachers who are planning to leave may be more likely to respond if they see the survey as an outlet to express their dissatisfaction, which would yield more negative perceptions on our survey than in the target population. We aim to unpack these possibilities in a set of supplementary analyses treating nonresponse as a category of intent (described under Expressed Intent later in this section), but note that as in any survey research, our findings are ultimately driven by our respondent sample. Ultimately, we observe four survey response cohorts and their turnover behavior as of the following year. In our study period, we examine three years of turnover behavior for the 2018-19 and 2019-20 response cohorts (both pre-pandemic responses), two years for the 2020-21 response cohort (pandemic era response), and one year for the 2021-22 response cohort.

Partnership districts disproportionately serve students from disadvantaged backgrounds (see Appendix A, Table A-4, for selected student and teacher characteristics by Partnership status). Partnership districts serve much larger shares of students of color and economically disadvantaged students, respectively, in addition to with a larger percentage of English learners than non-Partnership districts. Along with having lower average student achievement, the

primary factor in Partnership identification, more than half of students in Partnership districts are chronically absent compared with 17% of students in non-Partnership districts.

Actual Turnover Behavior

To measure actual turnover behavior, we draw on five years of statewide administrative data from 2017-18 through fall 2022. We generate four mutually exclusive mobility indicators: stayer, transfer, leave Michigan public education, and role change. We code a teacher as a stayer if they remain in the same school in t+1, a transfer if they move to a teaching position in a new school, regardless of school district, and a leaver if they drop out of the dataset of Michigan public education employees entirely. The fourth indicator represents an out-of-school role change, though we do not estimate regression models predicting this outcome because we lack a parallel intent measure. We also create a separate "leave school, any" measure that takes a value of one regardless of pathway out, including if they transfer, move to a non-teaching role outside the school, or leave the dataset entirely. We measure mobility from school year t to fall of t+1.

We create separate variables for year t+1 (i.e., mobility between year t and t+1) and then for two additional years (i.e., mobility between year t and t+2; mobility between year t and year t+3). We construct these additional year lagged variables to indicate whether a teacher takes a particular pathway at any time up to a given year. For example, a teacher who transfers from their year t school in t+1 would be coded as a transfer in t+1, t+2, and t+3 because they have transferred *as of* each of these time periods. A teacher who transfers in year t+2 would be coded as a stayer in t+1 and a transfer in t+2 and t+3. In other words, t+2 mobility is inclusive of t+1 mobility, and t+3 mobility is inclusive of t+1 and t+2 mobility.

Expressed Intent

To measure intent, we draw from a question in the teacher survey asking about employment plans for the following school year. Teachers were asked to select one option about their plans for the next year from the following response options: (a) continue teaching in this school, (b) serve in a different position in this school, (c) continue teaching in my district but in a different school, (d) leave this district to work in a different district or charter network, (e) leave to pursue a job not in education, or (f) retire. We collapse these responses into three mutually exclusive categories in parallel with the first three mobility outcomes we measure for actual behavior described above: stay in school (option a or b),[3] transfer (option c or d), and leave or retire (option e or f). In line with our approach to the outcome in the administrative data, we again create a measure of intent to "leave school, any," which, in parallel to the actual behavior variable, takes the value of one for any teacher reporting plans to leave the school, regardless of intended pathway out (option c, d, e or f).

Other Predictors of Teacher Mobility

Guided by the organizational science literature showing that working conditions play a role in both intent and actual turnover behavior (e.g., Griffeth et al., 2000), we include in our analyses several malleable school organizational conditions from both the administrative and survey data as possible predictors of teacher mobility. Drawing on the survey data, we use exploratory factor analysis to develop constructs related to work environment and organizational commitment as shown in our conceptual framework. We then conduct a confirmatory factor

[3] While option b allows teachers to note they plan to change roles within a school, our *actual behavior* role change outcome described above captures out-of-school movement to a non-classroom teaching role. In our intent measure, we choose to collapse option b into "stay in school" because teachers interpreted it in different ways (e.g., move to non-teaching role, change teaching assignments), because our theory of action posits that positive (negative) organizational conditions would induce a teacher to remain in (leave) their school even if they change roles within it, and because an insufficient number of respondents selected this option to treat it as its own category.

analysis and generate seven measures of school organizational conditions and pandemic conditions from teachers' responses to survey questions about 1) the extent to which they buy in to their school or district's improvement goals; 2) positive school climate; 3) school safety and student behavior; 4) effective school leadership; 5) human resources hindrances; 6) adequate teacher resources and capacity; and 7) student pandemic challenges. Each of these constructs aligns with a bulleted item in the "Direct and indirect influences on turnover behavior" box in the conceptual framework in Figure 1.[4] Thus, we would expect that each would influence intent, and to a lesser degree, actual behavior. Some questions were not asked during the pandemic because the research team chose to remove items that might be less applicable when schools were operating largely remotely, and other questions were only asked during the pandemic school years in order to understand new challenges that might have arisen as a result of the pandemic. Cronbach's α values range from 0.740 to 0.944.[5]

Following Kraft and colleagues (2021), we create two versions of these constructs. The first is based on the teacher-level responses, and the second is a jackknife measure of peers' responses, which is a school-by-year mean omitting the observed teacher's response.[6] While the individual-level measure allows us to examine the relationship between teacher-specific perceptions of school organizational conditions and intent, it is also likely that a teacher's perceptions of organizational conditions is endogenous with their intent. By omitting the observed teacher's response, the jackknife (i.e., peer) measure allows us to examine the

[4] Unlike the first six, each of which fit cleanly into a single category, student pandemic challenges may reflect two different categories. It may fall under work environment to the extent that the interaction of student challenges and teacher resources affect teacher self-efficacy, or under organizational commitment to the extent that student challenges prompt mission-driven teachers to remain in their positions. Prior research on this sample has found that students are among the most salient reasons teachers choose to stay (Strunk et al. 2022).
[5] For items included in each factor, factor loadings, and more information on our EFA, please see Appendix B.
[6] We restrict the sample for the jackknife measure to teachers in schools with three or more school-year observations.

relationship between school-level perceptions and teacher intent. The two serve complementary purposes, where the individual-level construct provides a direct measure of the perception of the teacher for whom we observe intent, and the peer measure breaks the link between individual teacher perceptions and intent (Kraft, Simon, and Lyon 2021).

We also draw on administrative data to create school- and teacher-level demographic and certification measures relevant to our conceptual framework, including enrollment and the shares of students who are economically disadvantaged, special education, English learners, Black, Hispanic or Latino/a/x, White, and other race (Asian, Pacific Islander, two or more races, other). At the teacher level, we control for individual characteristics, including demographic variables for race/ethnicity following the same categories above, as well as gender and age. We include four teacher certification levels: standard (the state's initial standard teaching certificate), professional (a more advanced certification that teachers can progress to after three years at a standard certification), legacy (credentials that are no longer offered but are similar to the professional certification and, unlike the others, do not need renewal), and interim or temporary certification.

Finally, for supplementary analyses unpacking the role of alternative employment opportunities in teacher decisions, we also draw on teacher certification endorsement areas and county unemployment rates, respectively. While Michigan teachers can be endorsed in several different subject areas based on education and subject-area tests, we focus on endorsements for STEM subjects and special education, while teachers in all other areas as "other." Subject area may contribute to what we call alternative employment opportunities in our conceptual framework because STEM and special education likely have more potential job opportunities that may motivate them to leave their positions (Ingersoll and Perda 2010; Sutcher, Darling-

Hammond, and Carver-Thomas 2019). Then, to examine whether more macro-level economic factors might play a role in teacher decisions, we draw four years of county-level annual unemployment rate data from the Bureau of Labor Statistics. We merge this measure into our dataset based on school county and spring year, which is when teachers would apply and move to other positions. Our analyses then draw on two unemployment-related measures. The first is the continuous measure representing county unemployment rate for the year, and the second is a dichotomous variable indicating whether a county has an unemployment rate lower or higher than the national average for that year.[7]

3.2 Empirical Strategy

To answer RQ1 about the extent to which turnover intent is associated with turnover behavior, we construct simple crosstabulations of teacher-reported intent (i.e., stay, transfer, leave education or retire) and actual turnover behavior (i.e., stay, transfer, out-of-school role change, leave Michigan public education). For example, we measure the share of teachers who reported plans to stay in year *t* who actually stayed, transferred, moved to a different role, and left Michigan public education, respectively, in *t*+1. We do the same for teachers who reported plans to transfer and leave or retire, respectively. We then restrict the sample to response cohorts that we can observe over multiple years and repeat this analysis for intent in year *t* and actual turnover behavior in *t*+2 and *t*+3 to examine whether intent is predictive of later behavior. In a supplementary analysis, we then expand the sample to all surveyed teachers (rather than all respondents) and treat nonrespondents as their own category to examine whether nonresponse

[7] Thirteen unique counties are represented in our dataset, with unemployment rates ranging from a low of 2.9% in 2019 to a high of 13.5% in 2020. Over the four years of our study, 13 of 47 county-years (27.7%) have unemployment rates below the national average. The county-level mean unemployment rate is 6.3 (median 5.6) and the teacher-level mean unemployment rate in our analytic sample is 7.4 (median 7) because larger schools in our population of low-performing schools are concentrated in high-density, low-income areas.

may be its own signal of turnover behavior. Finally, we invert the axes on these analyses and calculate the share of teachers who *actually* stayed, transferred, changed roles, and left, respectively, who reported plans to do so. Whereas the first set of analyses provides insight into whether individual teacher responses are a signal of later behavior, this next analysis provides information on the strength of the aggregate signal on these surveys.

Next, we run a linear probability model predicting each binary turnover outcome (leave school for any pathway, transfer, and leave or retire) for teacher *i* in school *s* at time *t*+1 as a function of expressed intent:

$$TurnoverBehavior_{ist+1} = \beta_0 + \beta_1 TransferIntent_{ist} + \beta_2 LeaveRetireIntent_{ist} + \gamma \boldsymbol{X}'_{st} + \lambda \boldsymbol{Y}'_{it} + \pi_t + \sigma_s + \varepsilon_{ist} \quad (1)$$

In Equation 1, *TransferIntent* is a binary variable that takes a value of one if the teacher reported plans in year *t* to transfer and zero otherwise. *LeaveRetireIntent* is a binary variable that takes a value of one if the teacher reported plans in year *t* to leave education for another field or retire and zero otherwise. ***X'*** is vector of time-variant school-level covariates including share of students who are economically disadvantaged, English learners, and receive special education services, respectively, share of students in each racial/ethnic group described above, and a logged function of enrollment. ***Y'*** is a vector of teacher covariates including race/ethnicity, gender, a spline function of age, and certification type with professional certification as the reference category. We operationalize age with six indicator variables—less than 30, 30-45, 46-54, 55-59, and 60+, with 30-45 as the reference category. Each of the three upper age categories align with various Michigan retirement system ages; teachers who are members of the retirement plan that went into effect in 1990 can retire at age 46, 55, or 60, depending on years of service and other

factors. We also include a year fixed effect (π), school fixed effect (σ), and idiosyncratic error term clustered at the school level (ε). The school fixed effect allows us to isolate the effect of turnover intent from other stable school-level factors that might also contribute to turnover.

Because the outcome is a dichotomous measure of turnover behavior, the estimate on β_1 provides the estimated difference in probability of turnover associated with expressed intent to transfer, and β_2 provides the estimated difference in probability of turnover associated with expressed intent to leave or retire—both relative to intent to stay, after controlling for school covariates, teacher covariates, and school fixed effects. To the extent that expressed intentions are predictive of actual turnover behavior even after controlling for these factors, we can conclude that intent provides useful information on likelihood of teacher mobility over and above other teacher- and school-level factors that existing literature suggests is predictive of turnover.

For the model predicting leaving the school, regardless of pathway out, estimates are relative to remaining in the school. For the model predicting leaving Michigan public K-12 education or retiring, estimates are relative to staying in education, including staying at the same school or transferring. In the model predicting transfer, we include control variables for leaving Michigan K-12 public education and out-of-school role change. Thus, the estimates in the transfer models are also relative to remaining in the school.

While we do not include measures of alternative employment opportunities in our main models, we run supplementary models aimed at investigating their role in the relationship between intent and actual behavior, discuss results in text, and provide full tables in Appendix C.IV. To do so, we run Equation 1 separately for teachers based on endorsement area. Specifically, we run separate models for teachers with endorsements in STEM, special

education, and any other area, respectively, and compare the estimates on intent across models. Next, drawing on county unemployment rates, we run two additional sets of models. In one, we add county unemployment rate as a covariate to examine whether its inclusion attenuates the relationship between intent and turnover. Next, we supplement Equation 1 by interacting each intent variable with our "low unemployment rate" indicator. In doing so, we produce separate estimates for teachers in low unemployment rate counties and teachers in average-to-high unemployment rate counties.

We repeat the models in Equation 1 replacing the outcome with turnover behavior as of t+2 and t+3, respectively, in order to examine the association between intent and lagged behavior. In these models, we restrict the sample to the 2018-19 and 2019-20 survey response cohorts to track the same group of teachers over time. Finally, we expand the sample to include nonrespondents and add $\beta_3 NonResponse_{ist}$ to Equation 1, which allows us to produce an estimate of the probability of turnover for nonrespondents relative to respondents indicating intent to stay.

To answer RQ2 about pre-pandemic and pandemic-era differences, we repeat each of these main models separately for each year, dropping time-invariant school covariates and year fixed effects. We do not pool pre-pandemic and pandemic years (i.e., years 1 and 2 vs. years 3 and 4) because they are meaningfully different. Fall 2018 responses were largely business as usual, and turnover behavior after the 2018-19 school year would not be affected by the pandemic. In 2019-20, fall 2019 *responses* were business as usual, while *actual turnover behavior* at the end of the 2019-20 school year is heavily confounded by the start of the pandemic. Then, in 2020-21, national and Michigan-specific analyses suggest teachers were waiting out the pandemic to make job changes; transfers in particular dipped considerably

relative to other years (Camp, Zamarro, and McGee 2023; Goldhaber and Theobald 2023; Hopkins, Strunk, and Rogers 2023). By 2021-22, teachers were no longer in a pandemic holding pattern but had been impacted by pandemic-era teaching.

Finally, to answer RQ3 about predictors of intent and turnover, we run a series of regressions predicting each of the three binary outcomes (leave school for any pathway, transfer, leave Michigan education or retire) for intent and actual turnover behavior, respectively, for teacher *i* in school *s* at time *t.* The first of these models take the form

$$TurnoverOutcome_{ist(+1)} = \beta_0 + \gamma \boldsymbol{X}'_{st} + \lambda \boldsymbol{Y}'_{it} + \pi_t + \varepsilon_{ist}\,, \quad (2)$$

predicting either turnover intent in year *t* or actual turnover behavior in *t*+1. The rest of the model follows the same format as Equation 1 but excludes the intent variables on the right side. Here, our coefficients of interest are those on the school measures in ***X'*** and the teacher measures in ***Y'***. π is a year fixed effect and ε is an idiosyncratic error term clustered at the school level. Similar to Equation 1, we add a control for (intent to) leave education or retire (and in the case of the actual behavior models, a control for switching to a non-teaching role outside of the school) to the model predicting transfer so that the coefficient estimates are relative to remaining in the school. In these models, we do not include school fixed effects because we are interested in leveraging between-school variation in school-level factors and school organizational conditions in our estimates, which are descriptive in nature. While models including school fixed effects provide more precise estimates on the intent variables in Equation 1 above, they would be less informative for understanding the role of individual and school characteristics because they would leverage very limited between-year variation that is likely driven in large part by differences in respondents, especially in smaller schools.

Next, to assess the extent to which our school organizational conditions and commitment measures predict turnover (intent) over and above these individual characteristics, we add each construct into a separate model taking the form:

$$TurnoverOutcome_{ist(+1)} = \beta_0 + \beta_1 SchOrgCondition_{ist} + \gamma \boldsymbol{X}'_{st} + \lambda \boldsymbol{Y}'_{it} + \pi_t + \varepsilon_{ist}\,, \quad (3)$$

where $SchOrgCondition_{ist}$ is a construct representing a school organizational condition for teacher *i* (with different models for the individual and jackknife measures) in school *s* at time *t*, with each construct included in its own model to avoid collinearity. The remainder of the model is identical to that in Equation 2. Here, β_1 is the estimate of interest, providing the difference in probability of (intent to) turn over associated with a one-standard deviation increase in the school organizational condition.

In models with all four years pooled together, we include, one at a time, the three constructs we observe each year: improvement goal buy-in, positive school climate, and effective school leadership. We then run the same model separately by year, excluding the year fixed effect, in order to generate estimates for constructs that we do not measure in each of the four years. This provides us with annual estimates on human resources hindrances, student pandemic challenges, adequate teacher resources and capacity, and school safety and positive student behavior. Because we do not find many meaningful differences by year in these models, we report only the coefficients on school organizational conditions and organizational commitment (i.e., β_1). We highlight relevant year differences in text and point readers to Appendix E.III (intent) and E.IV (actual behavior) providing year-by-year models. For brevity, we show school organizational conditions results for the "leave school for any pathway" outcome in the main text

and then provide results for the transfer and leave Michigan education outcomes in Appendix E.I (intent) and E.II (actual behavior).

Finally, in line with our conceptual framework showing that withdrawal behaviors and cognitions may partially mediate the relationship between school organizational conditions and turnover behavior, we further examine RQ3 by estimating the model

$$TurnoverBehavior_{ist+1} = \beta_0 + \beta_1 SchOrgCondition_{ist} + \beta_2 TransferIntent_{ist} + \beta_3 LeaveRetireIntent_{ist} + \gamma \boldsymbol{X}'_{st} + \lambda \boldsymbol{Y}'_{it} + \pi_t + \varepsilon_{ist}\,, \quad (4)$$

which predicts actual turnover behavior, adding the intent measures from Equation 1 into the fully specified model in Equation 3. Here, the estimate on β_1 represents the difference in probability of turnover associated with a one-standard deviation increase in the school organizational condition, *after controlling for reported intent*. If teachers with more negative perceptions of school climate are also more likely to report plans to turn over, the magnitude of the estimate on school climate would diminish in Equation 4. Thus, the β_1 estimate in Equation 4 relative to Equation 3 provides insight into the extent to which reports of organizational conditions and withdrawal cognitions such as intent are overlapping constructs, and unpacks the cognitive process through which a teacher may decide to stay or leave. Additionally, to the degree that intent and teacher reports of organizational conditions are correlated, the estimates on β_2 and β_3 will be magnified from the parallel intent estimates in Equation 1. Because individual reports of intent and organizational conditions come from the same survey instrument, we expect differences to be most apparent for the models using the teacher-specific individual measures and less so for those using the jackknife peer measures.

For all equations 1-4, our preferred models are LPMs that include sample and nonresponse weights because the LPM coefficients allow for ease of interpretability and the weighted models account for observable differences between the respondent and actual sample. We have also run several variations to check the robustness of our results, and find qualitatively similar results across all variations, including logistic regressions and unweighted models (available upon request).

3.3 Limitations

There are three important limitations in the survey data in particular. The first is that in the first survey year (2018-19), respondents were allowed to select multiple options to the question asking about plans for the following year. Here, if they selected any plan to leave the school (even if they also selected a plan to stay), we coded them as intending to leave the school. For the mutually exclusive mobility categories, we coded the most extreme plan selected. For example, we would code a respondent selecting transfer and retire as "leave or retire." A second limitation stems from survey timing. The pre-pandemic surveys were both administered in late fall (November-December of 2018 and 2019), while the pandemic-era surveys were administered in early spring (February-March of 2021 and 2022). It is possible that teachers have a better idea of their employment plans in spring than in fall. Therefore, pre-pandemic to pandemic-era differences may be confounded by survey timing. However, districts typically ask teachers to notify them of plans to leave later in the spring semester with teacher job applications tending to peak in March (Levin and Quinn 2003), and surveys in all years were administered prior to that timeline. Thus, the implications of survey timing may be minimal. Finally, as is typical of survey research, the third limitation is response rate. We aim to address this limitation through our inclusion of nonresponse weights, though these only adjust for observable teacher characteristics

and cannot mitigate bias stemming from relevant unobserved differences between respondents and nonrespondents. For instance, it is possible that survey nonresponse is its own form of withdrawal behavior. Thus, we run several additional analyses treating nonresponse as its own category. This allows us to measure the extent to which there are systematic differences between respondents and nonrespondents on our outcomes of interest.

4. Findings

In this section, we summarize our findings, organized by research question. First, to answer RQ1 about intent as a predictor of actual turnover behavior, we provide results characterizing the extent to which intent is associated with actual turnover behavior. We begin with a descriptive analysis, followed by the regression models shown in Equation 1 above. Next, to answer RQ2 about differences in this relationship from pre-pandemic to pandemic years, we show descriptive year-to-year trajectories of turnover intent and actual turnover behavior side by side. We then rerun Equation 1 separately by year to empirically unpack these year-to-year differences. Finally, to answer RQ3 about the predictors of intent and actual turnover behavior, we provide results from Equation 2, showing the relationship between teacher characteristics, school characteristics, and our turnover outcomes. We then show results specific to school organizational conditions and commitment from Equation 3. Finally, we provide the partial mediation results from Equation 4 to gauge the extent to which reports of intent and organizational conditions are overlapping constructs.

4.1 RQ1. Intent as a Predictor of Actual Turnover Behavior

Figure 2 provides the descriptive analysis associated with RQ1, displaying the share of teachers in each intention category (stay, transfer, leave/retire, and nonrespondent) who actually stayed, transferred, changed roles, or left Michigan education, respectively. More than 8 in 10 teachers stayed in their school, regardless of expressed intent the year prior. However, there is

meaningful signal in the survey responses. The first bar shows that about 90% of the teachers reporting plans to stay did stay in their school the next year, while about 7% transferred, 2% changed roles, and 1% left Michigan public education. The second bar shows that approximately a quarter those reporting plans to transfer the following year actually did so, while 2% changed roles, 4% left Michigan public education, and two-thirds remained in their school. The third bar shows that 16% of those reporting plans to leave or retire did so, whereas 9% transferred, 2% changed roles, and nearly three-fourths remained in their school the following year. Taken together, these descriptive analyses show that teachers who reported plans to leave their school for any pathway out (i.e., intended transfers and leavers/retires) were three times more likely to do so the following year than teachers who reported plans to stay (30% vs. 10%).

The final bar, enclosed in an outer gray box because the analysis here expands the sample to all surveyed teachers regardless of whether they responded, shows that nonrespondents stay in their schools at higher rates than intended transfers and leavers/retires, respectively—but at a lower rate than intended stayers. In particular, nearly 85% of nonrespondents stayed in their school the following year, 9% transferred, 2% changed roles, and 5% left Michigan public education. This finding suggests that nonresponse may be a form of withdrawal behavior but contains less signal toward eventual behavior than do actual survey responses. For simplicity, we focus moving forward on the signal contained in survey responses rather than including nonrespondents as their own category in each analysis. However, for subsequent analyses, we provide information on the behavior of nonrespondents and point interested readers to appendix tables where relevant.

We also invert these analyses to examine the reported intent of teachers who actually stayed, transferred, changed roles, and left Michigan public schools, respectively. We provide

these results in Appendix C.I (Figure C-1). Here, we find some variation by pathway, with 85% of those who actually stayed reporting plans to stay, 30% of those who actually transferred reporting plans to transfer, and 46% of those who actually left Michigan public education reporting plans to leave or retire. In other words, intent to leave or retire is a stronger signal than intent to transfer.

While Figure 2 shows that most teachers stay in their schools regardless of expressed intent the year prior, behavior may lag behind intent if it takes additional time for teachers to carry out exit plans. Thus, we turn next to a descriptive analysis of teacher pathways for up to three years following survey response. Panel A of Figure 3 follows the 2018-19 and 2019-20 survey response cohorts for three years after they were surveyed, with actual turnover behavior in t+1, t+2, and t+3 by expressed intent in year t. Of those in these response cohorts reporting plans to stay, 90% stayed in t+1, 79% stayed into t+2, and 67% stayed into t+3. While only about 20% of intended transfers in these response cohorts actually transferred in t+1, one-third had transferred by t+2, and 45% had transferred by t+3. Because several other intended transfers ended up changing roles or leaving, by the end of the three-year period, only 40% of intended transfers remained in their school. Among those reporting plans to leave education or retire, the share who actually did so ticked upward only slightly. However, those reporting plans to leave education or retire did leave their schools at increasing rates—in many cases for a role change within Michigan public education. The share of these teachers who remained in their school decreased to 72% in t+1, 42% in t+2, and just 28% in t+3. While only 18% left Michigan public schools entirely by t+3, more than one-third had shifted to a non-teaching role in public education while 19% had transferred to a teaching position at another school. Thus, reported plans to leave education or retire are a strong signal that the teacher will leave their school—if

not to retire then to move into a non-teaching role or transfer to another school. Panel B shows that mobility among the 2020-21 survey response cohort also increased over time.

Appendix C.I (Figure C-2) shows that nonrespondents stay at higher rates than intended stayers and lower rates than intended transfers. By *t*+3, 59% of nonrespondents remained in their schools, 22% transferred, 14% changed roles, and 5% left Michigan public schools. Put another way, 41% of nonrespondents had left their school for any pathway out within three years, compared with one-third of intended stayers, 60% of intended transfers, and 72% of intended leavers/retires.

We turn next to the regression results from Equation 1, which predicts actual turnover behavior as a function of intent, teacher covariates, time-varying school covariates, and school fixed effects. These results, presented in Table 1, Panel A, Column 2, show that intent to transfer and intent to leave/retire, respectively, are associated with an 18-19 percentage point increase in the probability of leaving the school for any pathway out. Intent to transfer is associated with a 15 percentage point increase in the probability of actually transferring (Column 4), and intent to leave or retire is associated with a 15 percentage point increase in the probability of actually leaving (Column 6). By contrast, after controlling for school demographics, teacher characteristics, and year and school fixed effects, intent to leave or retire is not a significant predictor of transfer (Column 4), while intent to transfer is only a weak predictor of leaving (Column 6).

In models that include nonresponse as a category (Appendix C.II, Table C-1), the coefficient estimates on intent to transfer and leave/retire, respectively, remain similar. Meanwhile, nonresponse is associated with approximately a 5 percentage point increase in the probability of leaving the school for any pathway out, a 2 percentage point increase in the

probability of transferring, and a 4 percentage point increase in leaving Michigan public schools. In other words, nonrespondents are more likely to turn over than teachers who reported intent to stay, but less likely to turn over than teachers who explicitly reported an intent to do so.

We next restrict the original analytic sample to just the two response cohorts for which we can observe up to three years of turnover behavior and re-estimate Equation 1 to predict turnover the year following reported intent (t+1), two years later (t+2), and finally three years later (t+3). These results are shown Table 1, Panel B, and displayed graphically in Figure 4. Each estimate in Figure 4 comes from a different model, with models predicting leaving the school for any pathway out in Panel A, models predicting transfer in Panel B, and models predicting leaving Michigan public schools in Panel C. In Panel A of Figure 4, the estimates on intent to transfer increase in each of the three years, while the estimates on intent to leave education or retire increase in from t+1 to t+2 and remain elevated in t+3. Specifically, teachers who reported in year t that they intended to transfer were 14 percentage points more likely to leave their school in year t+1, 22 percentage points more likely by t+2, and 24 percentage points more likely by t+3. Those reporting plans to leave education or retire were 20 percentage points more likely to leave their school in t+1, 38 percentage points more likely by t+2, and 35 percentage points more likely by t+3.

Panels B and C together show that intent to transfer is more predictive of actual transfer while intent to leave or retire is more predictive of actually leaving—providing evidence that the intent measures are capturing some degree of the expected construct of interest. In Panel B in particular, the estimate on transfer intent again increases monotonically in each year; teachers reporting intent to transfer were 10 percentage points more likely to do so in t+1, 15 percentage points more likely by t+2, and 18 percentage points more likely by t+3. Finally, Panel C shows

that those reporting intent to leave or retire are about 17-18 percentage points more likely to leave as of each year; here, intent is no more predictive by *t*+3 after controlling for school and teacher covariates than it is for *t*+1.

In sum, intent provides information about behavior, over and above other teacher and school characteristics, and actual behavior may lag behind intent. Descriptively, teachers reporting plans to transfer and retire leave their school at increasing rates over a three-year period. Even after controlling for other factors, teachers who report plans to transfer from their school are at much greater risk of actually leaving their school, even if they do not do so immediately.

Alternative Employment Opportunities

As depicted in the theoretical framework in Figure 1, the strength of the relationship between intent and behavior may vary by the availability of alternative employment opportunities because a teacher who wants to leave their school or the profession may not be able to do so until they find a new position. Two factors that may contribute to the availability of those positions are subject area and local economic conditions.

Our heterogeneity analyses by teacher subject area are presented in Appendix C.IV (Table C-4), providing evidence that the strength of the relationship between intent to transfer and actually leaving the school varies by a teacher's endorsement area. We observe the strongest relationship for STEM teachers, the next strongest for special education teachers, and the weakest for other teachers. In particular, intent to transfer is associated with a 27.5 percentage point increase in actually leaving the school for STEM teachers, a 22 percentage point increase for special education teachers, and a 16 percentage point increase for other teachers. Meanwhile, intent to leave education or retire is associated with a 25 percentage point increase in the

probability of leaving the school for special education teachers compared with an 18 percentage point increase for STEM and other teachers. This latter finding appears to be driven by special education teachers leaving classroom teaching for other roles in special education rather than leaving the public school system entirely. We do not find differences by subject area in the extent to which plans to leave education or retire are predictive of leaving the education system entirely, though this may stem from relatively small sample sizes of teachers reporting plans to leave.

Results from models that account for county unemployment rate are provided in Appendix C.IV, though we underscore that the sample has limited variation in unemployment rate in each year and resulting estimates are therefore necessarily imprecise. We do not find evidence that county unemployment rate mediates the relationship between intent and behavior (Appendix Table C-5). However, moderation analyses show that in counties with lower unemployment rates, the relationship between intent to leave/retire and actually leaving is descriptively stronger while the relationship between intent to transfer and actually transferring is descriptively weaker relative to counties with average-to-high unemployment rates (Appendix Table C-6). Together, this provides some suggestive evidence that in stronger economic climates, teachers may be *more* likely to follow through on plans to leave teaching, but *less* likely to follow through on plans to transfer.

4.2 RQ2. Differences Pre-Pandemic and Pandemic Era

While intent is a strong predictor of turnover in our pooled sample, we find that the pandemic temporarily muddled the relationship between intent and turnover behavior. Figure 5 illustrates descriptive differences in turnover intentions and actual behavior before and during the pandemic, with Panel A showing intentions over time and B showing behavior. The share of

teachers reporting plans to leave their school in fall 2019 increased from the prior year, but then the pandemic struck and turnover behavior dipped at the end of 2019-20. Then, in spring 2021, when teachers in Partnership districts were largely teaching remotely, they reported relatively few plans to turn over and actually did so at even lower rates than their reported plans. By spring 2022, intent and actual behavior aligned again but with intent to turn over outpacing actual mobility.

While more teachers reported plans to leave education or retire than actually did so, the rate of intended transfer was similar to the rate of actual transfer in the last two survey years. It is possible that this greater alignment was because the pandemic caused teachers to be more deliberate in their self-reporting, or because of teacher shortages emerging during and after the pandemic (when teachers may have found new positions more easily). It is also possible that this greater alignment may be in part due to survey timing. By February, when most teachers were taking the survey in these last two waves, they may have had a better idea of their employment plans—though as we describe above, teaching applications typically do not peak until March.

Regressions predicting actual turnover behavior by year, shown in Table 2, show that intent to transfer and leave education or retire, respectively, are both associated with a significant increase in actually leaving the school in all four years though there are some descriptive differences by year. Specifically, the predictive power of intent to transfer was weakest when (a) pandemic schooling was in effect, and (b) teachers were asked about their intent in late fall rather than early spring. It was strongest when teachers were asked about their intent after schools had returned to in-person learning and later in the school year. Intent to leave or retire was the weakest predictor of actually doing so in 2020-21 but rebounded to pre-pandemic levels in 2021-22. Together, these findings suggest that the pandemic appeared to temporarily stall plans to

transfer (though Figure 3 and Figure 4 show that many of these intended transfers eventually did so) but that those reporting plans to leave education or retire just before the pandemic struck were similarly likely to do so by the end of the 2019-20 school year as intended leavers in the year prior.

4.3 RQ3. Predictors of Intent and Actual Turnover Behavior

Student and Teacher Characteristic Predictors

Table 3 provides estimates from regressions predicting turnover intent (odd-numbered columns) and behavior (even-numbered columns) as a function of school and teacher characteristics as shown in Equation 2. While not shown here, we also estimate models with just the school-level covariates (i.e., excluding teacher characteristics), and in alignment with other research (Kraft, Marinell, and Shen-Wei Yee 2016; Loeb, Darling-Hammond, and Luczak 2005), we find that while intent and actual turnover is higher in schools with greater shares of economically disadvantaged students, the estimate attenuates as we add additional covariates related to teachers and school organizational conditions (see Appendix E.I for predictors of intent and E.II for predictors of actual turnover behavior). In the model predicting transfer behavior but not intent, the coefficient on enrollment is negative and significant, suggesting that teachers leave larger schools at lower rates than smaller ones. No other school-level variables are consistently significant predictors of intent or actual turnover behavior, suggesting that teacher turnover intentions are not, to a significant degree, driven by these student demographics.

In terms of teacher covariates, age is an important predictor of turnover intent, and in some cases, behavior. Relative to teachers aged 31-45 (the reference category), teachers under 30 are significantly more likely to report plans to leave their school for any pathway out and to transfer, but not significantly more likely to actually do so. Later-mid-career teachers (46-54) are

less likely to report plans to transfer but there are no significant differences in actual behavior. Teachers who are 55-59 (eligible for retirement under certain conditions) are less likely to report plans to transfer and leave/retire, respectively, but again not significantly different from the reference category in actual behavior. Finally, teachers who are 60+ therefore eligible to retire are about 10 percentage points more likely to report plans to leave/retire and 4 percentage points more likely to actually do so.

School Organizational Commitment and Organizational Conditions Predictors

The most consistent predictors of both intent and actual turnover behavior—for any pathway out, to transfer, and to leave or retire—are school organizational commitment and organizational conditions. Figure 6 provides the coefficient estimates from Equation 3 on each construct predicting leaving the school for any pathway out (tables from estimates on pooled sample are in Appendix E.I for intent and E.II for actual turnover behavior; tables from estimates on individual-year samples in E.III for intent and E.IV for actual turnover behavior). Panel A shows these estimates drawing on all four years of data for the three constructs we can observe in each of the four years, while Panel B shows estimates separately by year, including all constructs we can observe in a given year. Estimates based on the individual teacher construct measure are represented by solid markers while estimates from the jackknife peer measure are represented by unfilled markers. Triangles denote teacher-reported intent while diamonds denote actual behavior. Each estimate is from a different regression model. The coefficient estimate can be interpreted as the expected difference in the probability of leaving school given a one standard deviation increase in the observed construct.

There are two key takeaways from Panel A. First, it is clear that greater improvement goal buy-in, more positive school climate, and more effective school leadership are all associated

with a lower probability of intent to turn over and actual turnover behavior. Second, in alignment with our conceptual framework, these measures are stronger predictors of intent than actual behavior, though the difference between intent and behavior is attenuated using the peer measures. Third, individual-level measures are stronger predictors of intent than peer measures, but the individual and peer measures are similarly predictive of actual turnover behavior.

In particular, estimates from individual-level intent measures show that a one standard deviation increase in each of these three factors, respectively, is associated with an 8-9 percentage point decrease in the probability of intent to turn over, and about a 3 percentage point decrease in the probability of actual turnover, even after controlling for other school- and teacher-level covariates. A one-standard deviation increase in the parallel peer measures is associated with a 5-6 percentage point decrease in probability of intent to turn over and a 1-4 percentage point decrease in the probability of actual turnover (though the estimate on improvement goal buy-in is not statistically significant).

Results from models predicting transfer and leave/retire are provided in Appendix E.I (intent) and E.II (actual behavior). In these cases, the individual measures are each associated with a statistically significant 5-6 percentage point decrease in intent to transfer and 2-3 percentage point decrease in intent to leave or retire. The climate and leadership peer measures, respectively, are associated with 4 and 2 percentage point decreases in actual transfer behavior. None of the peer measures are significant predictors of actually leaving Michigan public education.

Panel B shows that the above results are consistent across years and before and after the pandemic's onset. Additionally, in the years we can measure school safety and positive student behavior, we find that it is a consistent predictor of intent using both the teacher and peer

measures. In particular, a one standard deviation increase in teacher perceptions of school safety and positive student behavior is associated with a 9-12 (individual measure) or 5-6 (peer measure) percentage point decrease in intent to leave the school, and a 2-5 (individual measure) or 3-5 (peer measure) percentage point decrease in the probability of actually leaving. Teacher perception of resources and capacity is a significant predictor of intent and to a lesser extent actual turnover behavior, but the relationship is smaller in magnitude than the other constructs. Finally, unlike the others, the valence on the last two constructs—student pandemic challenges and human resources hindrances—is negative. As these measures become larger, organizational conditions are worse. Thus, the positive individual-level estimates here suggest that the probability of intent to turn over and actual turnover increases as student pandemic and human resources challenges become greater.

Intent as a Mediator for Organizational Predictors. To unpack whether intent may be a partial mediator for the relationship between organizational commitment/conditions and actual turnover, Table 4 presents the results from Equations 3 and 4 predicting actual turnover behavior. We again show just the results from models predicting leaving the school for any pathway out, but provide the other two outcomes in Appendix E.V (Table E-24 and E-25). Columns 1-6 show results from models using the individual-level measures and Columns 7-12 show results from the peer measures. Odd-numbered columns are from unmediated models (Equation 3), with results matching those presented in Figure 6 above, while even-numbered columns are from partial mediation models (Equation 4). Within column pairs, evidence of mediation would be apparent in the attenuation of the organizational predictor from the odd- to even-numbered column. We find that intent does act as a partial mediator in the relationship between organizational

commitment/conditions and turnover behavior. This is true for individual measures and, to a lesser extent, peer measures.

For example, Columns 1 and 2 provide the estimates on the improvement goal buy-in construct for the unmediated and mediated models, respectively. The first model shows that a one standard deviation increase in teacher-reported school improvement goal buy-in is associated with a 2.8 percentage point decrease in the probability of leaving the school for any pathway out (Column 1). However, that estimate attenuates to -0.012 in the mediated model (Column 2). Thus, nearly 60% of the relationship between improvement goal buy-in and turnover is absorbed by the intent variables. The magnitude of mediation is similar for each of the three individual-level measures. In the models using the peer measures, the intent variables explain 29% (climate) to 50% (leadership) of the relationship between school organizational commitment/conditions and turnover behavior. We find similar patterns for the transfer and leave Michigan public schools outcomes (Appendix E.V, Table E-24 and E-25).

Together, these findings highlight that teacher perceptions of school organizational conditions matter to teacher intent, and, to a lesser degree, turnover behavior. Our models suggest that the most consistently important school organizational conditions to teacher intent and turnover are school climate, leadership, and school safety. The cleave between the intent estimates on the individual and peer measures suggests that teacher reports of intent and organizational conditions are related constructs. However, the similar individual and peer estimates for actual turnover behavior accentuates the importance of these school-level organizational conditions for teacher retention.

5. Discussion and Conclusion

In this paper, we set out to examine how teacher intentions are associated with eventual turnover behavior in low-performing turnaround districts as well as how these relationships may

vary before and after the pandemic's onset. Then we examine predictors of intended and actual turnover behavior, with a particular focus on malleable school factors (i.e., organizational commitment and conditions). We carry out these analyses in a sample of low-performing districts that serve a disproportionate share of the state's historically disadvantaged student populations and were slated for turnaround before the pandemic's onset. In sum, these districts experience the greatest rates of teacher mobility and have the greatest need for a stable workforce of engaged teachers.

We find that reported intent is in fact a significant predictor of eventual turnover behavior and becomes increasingly predictive over time. In particular, about 30% of teachers who reported plans to leave their school did so the next year, consistent with a recent study using national data showing that about one-third of teachers who indicated they would leave teaching as soon as possible actually left the next year (Nguyen et al., 2022). Our data allow us to expand on this national study as well as others that have measured turnover one year after reported intent. We find that turnover behavior often lags behind turnover intention. Of teachers who intended to transfer, 20% transferred to another teaching job the next year, one-third by year two, and 45% after year three. Many other teachers reporting plans to transfer ended up changing roles in education or leaving the public education system entirely, and only about 40% of intended transfers remained in their original positions after three years. Teachers reporting plans to leave or retire also left their schools at increasing rates over time; though less than 20% of those reporting plans to leave or retire did so within three years, another 55% transferred or shifted to a new role—showing that intent to leave teaching provides a strong signal about eventual teacher behavior. Together, these findings align with a large organizational sciences

literature showing that employee intent—or "withdrawal cognitions" is a meaningful antecedent to turnover.

Our results also help to explain the seeming misalignment between the alarming intention survey data collected during the pandemic and the relatively low exit rates that occurred immediately afterward, followed by the recent increase in actual attrition rates. Our study suggests that the stated intentions to leave may be borne out in the years *after* the pandemic. While the relationship between stated intentions and actual exit behavior diminished during the pandemic, the association between intention and turnover has regained its strength and returned to pre-pandemic levels.

Still, the relationship between stated intent to transfer or leave and immediately doing so is not perfect, nor would we expect it to be. To transfer schools or districts or to take a non-teaching position within public education, teachers must not only want to leave—there also must be positions available and they need to be selected into those positions. Depending on teachers' skills, qualifications and local labor market conditions, it may take time for those who wish to transfer or leave their schools to find an opportunity to do so, which may explain why intent to leave is more predictive over multiple years. Indeed, as suggested by our conceptual framework, the relationship between intent and behavior is stronger for teachers who are likely to have more alternative employment opportunities. For example, we find that the relationship is stronger for STEM and special education teachers, who likely have more employment options than teachers in other areas. We also find suggestive evidence that local economic conditions play a role as well; in stronger economic contexts, teachers may be more likely to follow through on intent to leave teaching but less likely to follow through on intent to transfer.

We further unpack the factors contributing to both intended and actual turnover, and find that school organizational commitment and conditions play a meaningful role in teachers' decisions to stay or leave. In particular, improvement goal buy-in, more positive school climate, more effective school leadership, and greater school safety are all associated with greater intent to stay and actual retention. These relationships hold whether we use individual teacher reports of these conditions or peer measures. Further, we find that teacher-reported intent is a partial mediator for the relationship between these organizational predictors and eventual turnover behavior; about 60% of the relationship between our teacher-level organizational conditions measures and actual turnover can be captured by teacher intent. This means that teacher-reported intent and perceptions of school organizational conditions are partially overlapping constructs that predict actual turnover behavior. It also means that, in alignment with our conceptual framework and a large literature on turnover processes (e.g., Dalessio et al., 1986; Miller et al., 1979; Mobley et al., 1978), working conditions moderate turnover intent and actual behavior. Consequently, turnover decisions are often preceded by withdrawal cognitions (e.g., reported intent) that education leaders may be able to stem before they materialize as actual turnover.

Our findings underscore several implications for policy and practice. First, our finding that intent is predictive of actual turnover behavior, immediately and then increasingly over time, suggests that educational leaders could benefit from conducting systematic data collection on teacher intent and leveraging those data to (a) engage in strategies for mitigating eventual turnover, and (b) plan for future recruitment efforts. Because actual turnover behavior often lags behind intent, school and district leaders may be able to avert the turnover cycle while teachers are still in the withdrawal cognition phase. Additionally, our suggestive finding that intent is similarly predictive in fall and spring implies that this systematic data collection may be able to

occur earlier in the school year so educational leaders have more time to plan and implement relevant strategies.

In line with a large literature on teacher working conditions (Hanushek, Kain, and Rivkin 2004; Ingersoll 2001; Johnson, Kraft, and Papay 2012; Kraft, Marinell, and Shen-Wei Yee 2016), our results show that district leaders could disrupt the turnover cycle by improving school organizational commitment and school organizational conditions including leadership, climate, and school safety. Although these factors are not straightforward to transform, they are indeed malleable at the school and district level in a way that policy-driven factors such as salary are not. For example, there is evidence that high quality teacher mentoring can strengthen organizational commitment and promote positive school climate, respectively (Darling-Hammond and DePaoli 2020; Hong and Matsko 2019). Because the pandemic amplified teacher stress and workload, streamlining workload and non-classroom obligations can also promote more positive organizational conditions, improve job satisfaction, and promote teacher retention (Doan et al. 2023; Pressley, Ha, and Learn 2021; Steiner and Woo 2021; Strunk et al. 2022). This is especially critical in schools slated for turnaround such as those in our sample because accountability pressures impose an extra layer of stressors on teachers in these schools (Berryhill, Linney, and Fromewick 2009; Harbatkin, Strunk, and McIlwain 2023). Additionally, there is evidence that teacher retention and collaboration both help to mediate effective school improvement (Henry et al. 2020; Pham 2023), underscoring the central importance of working conditions in turnaround schools and districts.

In parallel to efforts to avert turnover, district leaders can also plan recruitment strategies for the immediate and eventual turnover that will occur by rescaling reported intent based on expected follow-through. While our research suggests that about one-quarter of teachers who

report intent to leave for any pathway out actually do so in the following year, about 40% leave within two years, and more than half leave within three years. District leaders could calibrate these follow-through rates to their own local context—which may change as they implement policies designed to disrupt the turnover cycle—to plan for the number of vacancies they will have to fill. To the extent that they can collect data on subject area as part of a teacher intent survey, they could further calibrate expectations based on differential follow-through rates.

Policymakers also stand to benefit from systematic data collection on teacher intent. For example, they could draw from teacher reports of intent to leave or retire to help predict teacher pipeline needs. To the extent that survey data suggest that increasing shares of teachers are planning to leave the profession, policymakers could consider strategies to shore up the teacher pipeline, such as financial incentives, grow-your-own programs, and teacher salary increases.

Finally, our findings suggest that policymakers and educational leaders should take teacher surveys seriously. While many teachers reporting plans to leave do not follow through, intent to leave signals job dissatisfaction, and teachers who say they are going to leave education or retire are highly likely to leave their school within three years—if not teaching or public education entirely. Meanwhile, intended leavers who do not actually leave may become less effective teachers if they engage in withdrawal behaviors such as tardiness, absenteeism, and reduced effort in the classroom (Liu and Raghuram 2022; Zimmerman et al. 2016).

In sum, previous analyses examining the degree to which intent is predictive of actual turnover behavior have been hamstrung by time-limited measures of behavior. Our findings show that intent becomes increasingly predictive over time, and the availability of alternative employment opportunities plays a role in whether and when teachers who intend to turn over actually do so. Thus, by collecting and acting on information about teacher intent, district and

school leaders may be able to mitigate turnover-related challenges in order to reduce teacher turnover, plan ahead for inevitable vacancies, and ultimately, improve student outcomes.

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Figures and Tables

Figure 1. Conceptual Framework

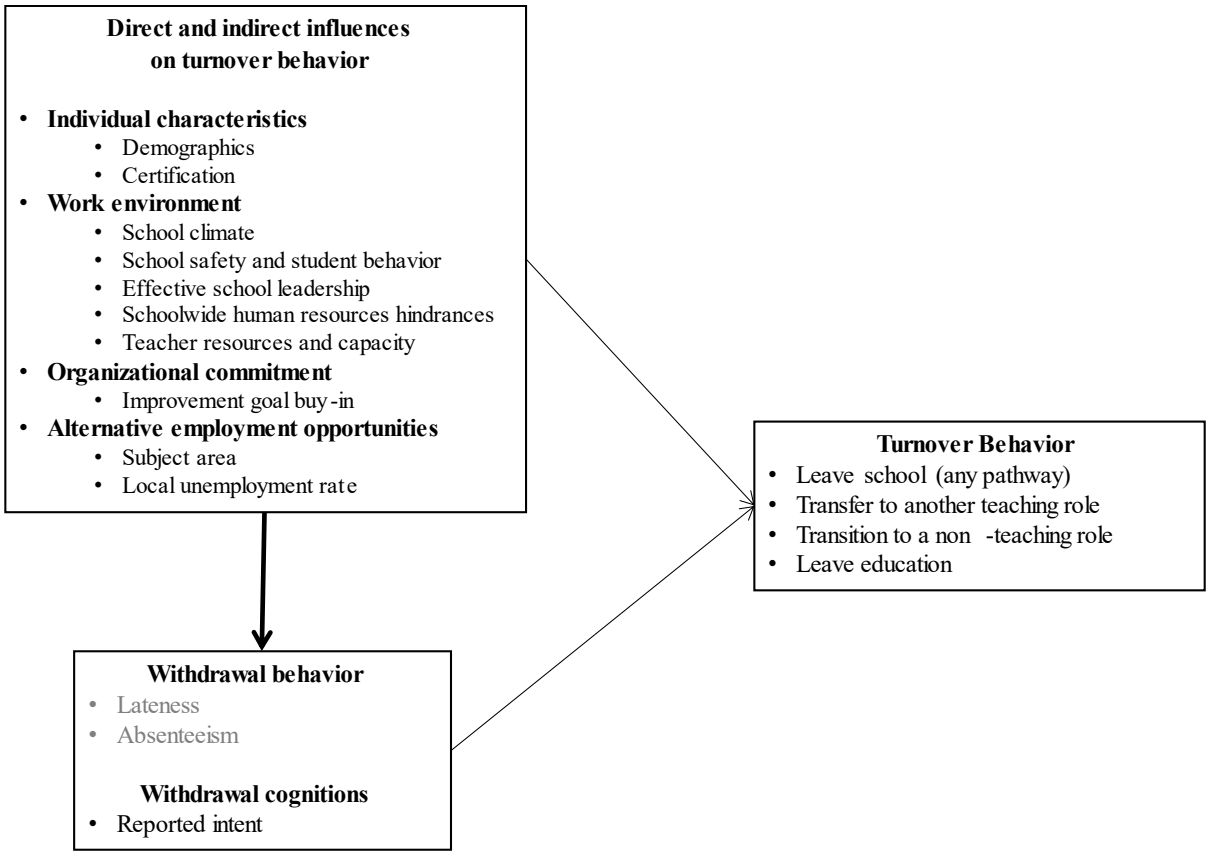
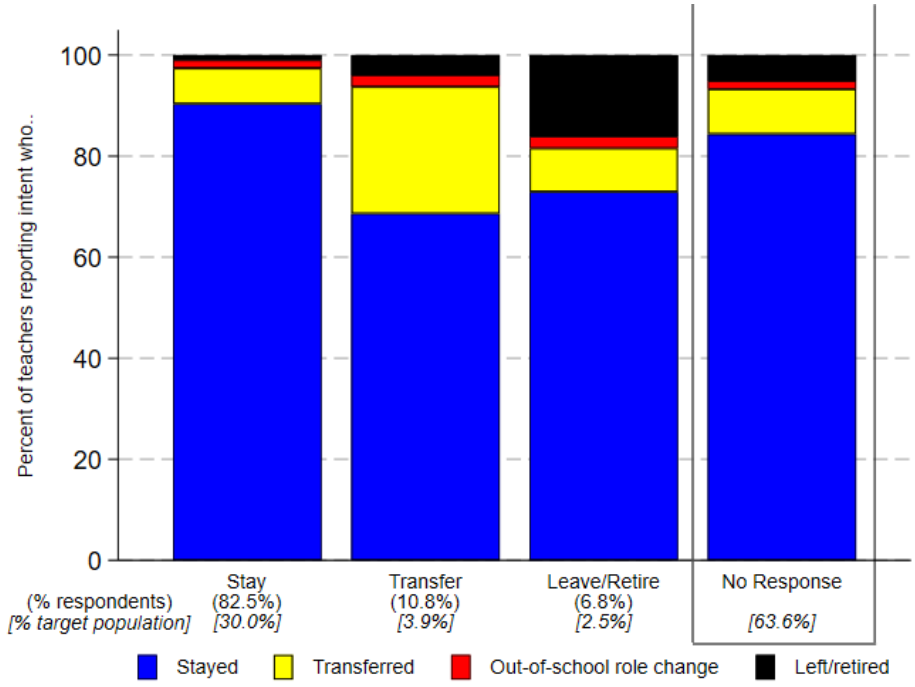


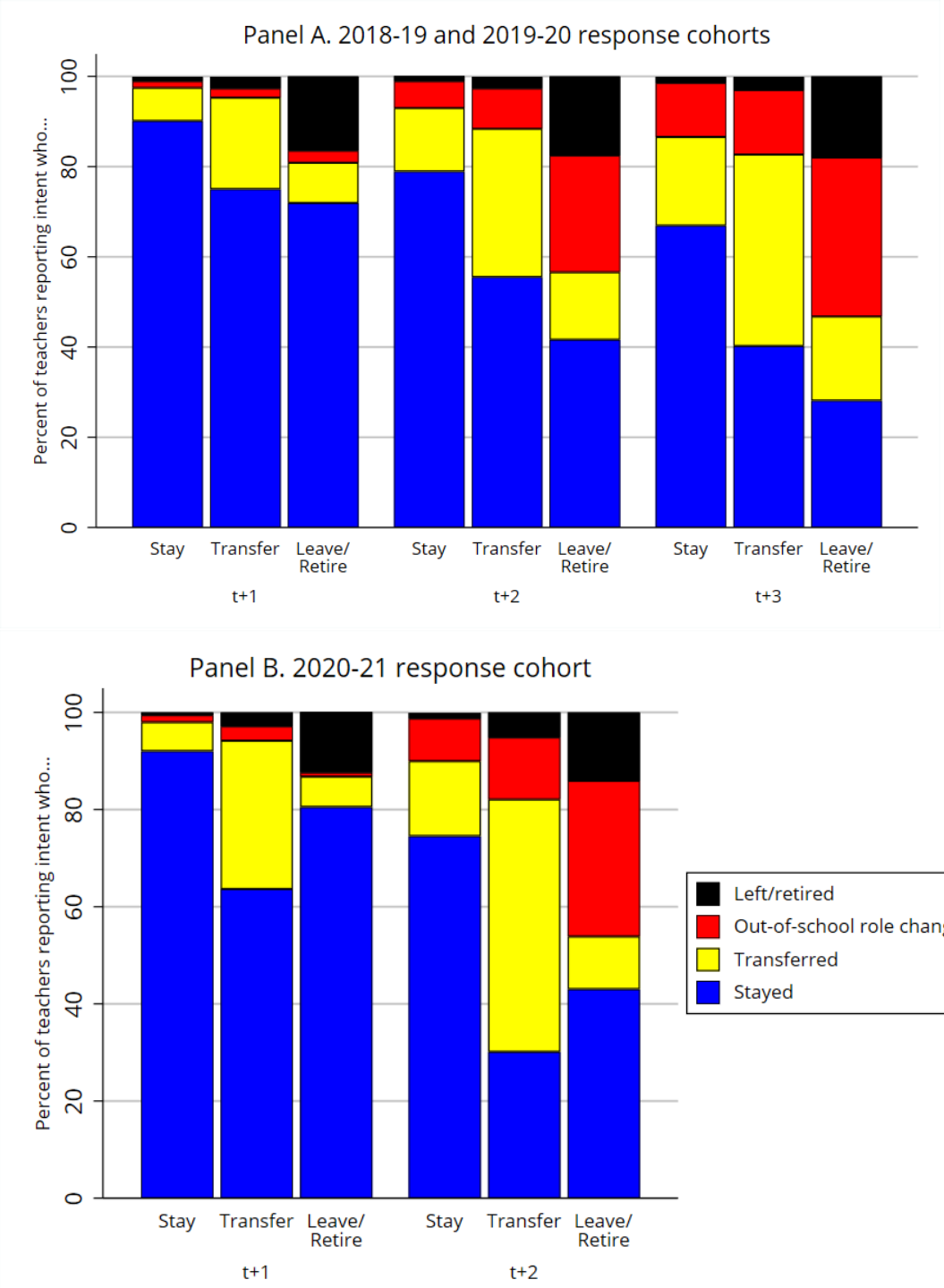
Figure 2. Actual Turnover Behavior by Reported Intent, 2018-19 through 2021-22



N=7,714 teachers with intent and behavior data (first 3 bars); 21,193 teachers in surveyed population, including respondents and nonrespondents (all 4 bars).

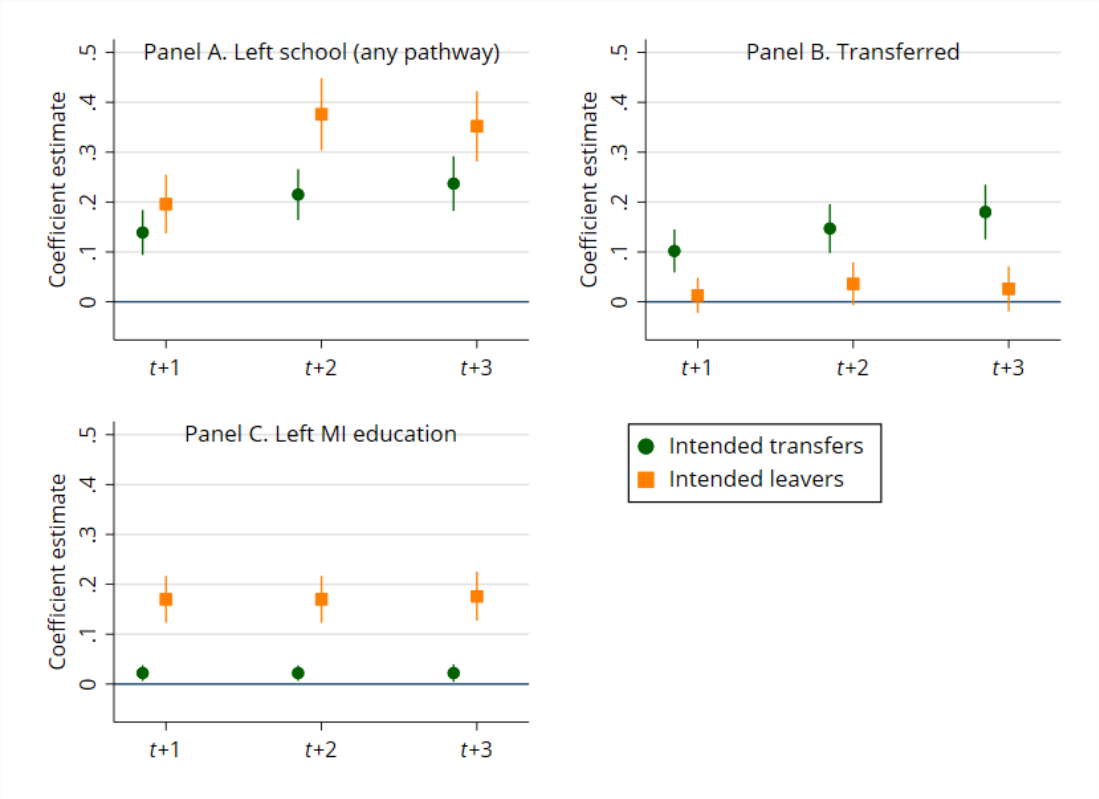
Note: Individual bars represent the full sample of teachers reporting plans to stay in their school, transfer, or leave/retire, or who did not respond to the survey, respectively. Percentages in parentheses denote share of teachers in respondent sample (respondents only) reporting listed plan; percentages in brackets, denote share of teachers in surveyed population (including respondents and nonrespondents) in each category. Bar section heights denote share of teachers in each category who stayed in their school, transferred, left the school but switched to a non-teaching role, and left Michigan public education. Results from descriptive crosstab analyses.

Figure 3. Actual Turnover Behavior by Reported Intent in t+1, t+2, and t+3



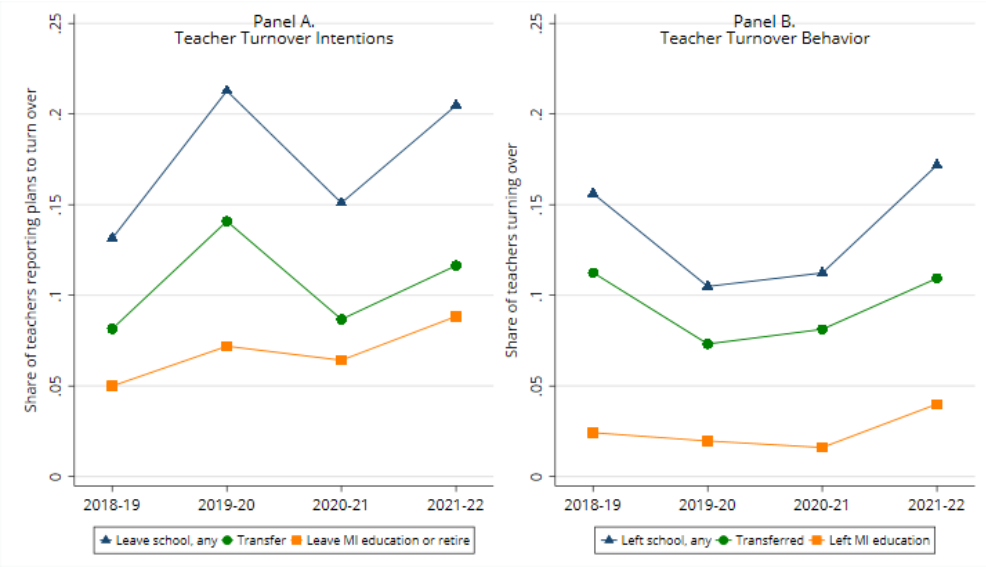
Note. Graphs track survey response cohorts over time (*t*+1, *t*+2, *t*+3) based on expressed intention in year *t*. First panel shows 2018-19 and 2019-20 respondents' actual behavior one, two, and three years after their responses. Second panel shows 2020-21 respondents' actual behavior one and two years after their responses. Individual bars represent the sample of teachers reporting plans to stay in their school, transfer, or leave/retire, respectively. Percentages beneath bar labels denote share of teachers in sample reporting listed plan. Bar section heights denote share of teachers who reported that plan who stayed in their school, transferred, left the school but switched to a non-teaching role, and left Michigan public education as of each year. Results from descriptive crosstab analyses.

Figure 4. Coefficient Estimates on Regression of Actual Turnover Behavior on Expressed Intentions One, Two, and Three Years After Expressed Intention



Note. Coefficient estimates from weighted, fully specified linear probability models with school fixed effects, shown in Equation 1. Standard errors clustered at the school level. Models include school, teacher demographic, teacher certification, and survey construct covariates, and year fixed effects, along with reported intent. All models restricted to two response cohorts (2018-19 and 2019-20) where we can observe all three years of outcomes. Associated coefficient estimates provided in Table 1, Panel B. Full model results provided in Appendix C.III (Table C-3).

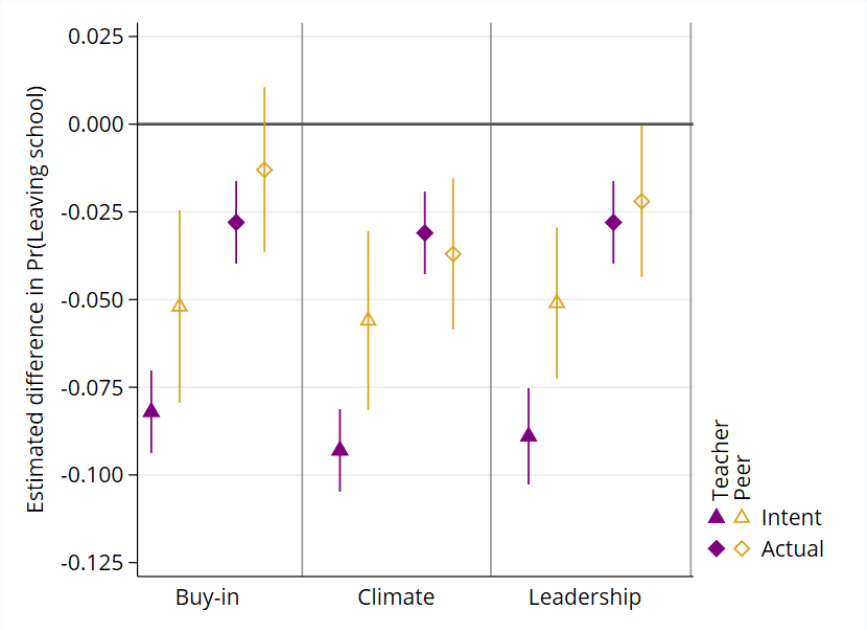
Figure 5. Teacher Turnover and Actual Behavior Over Time in Study Sample



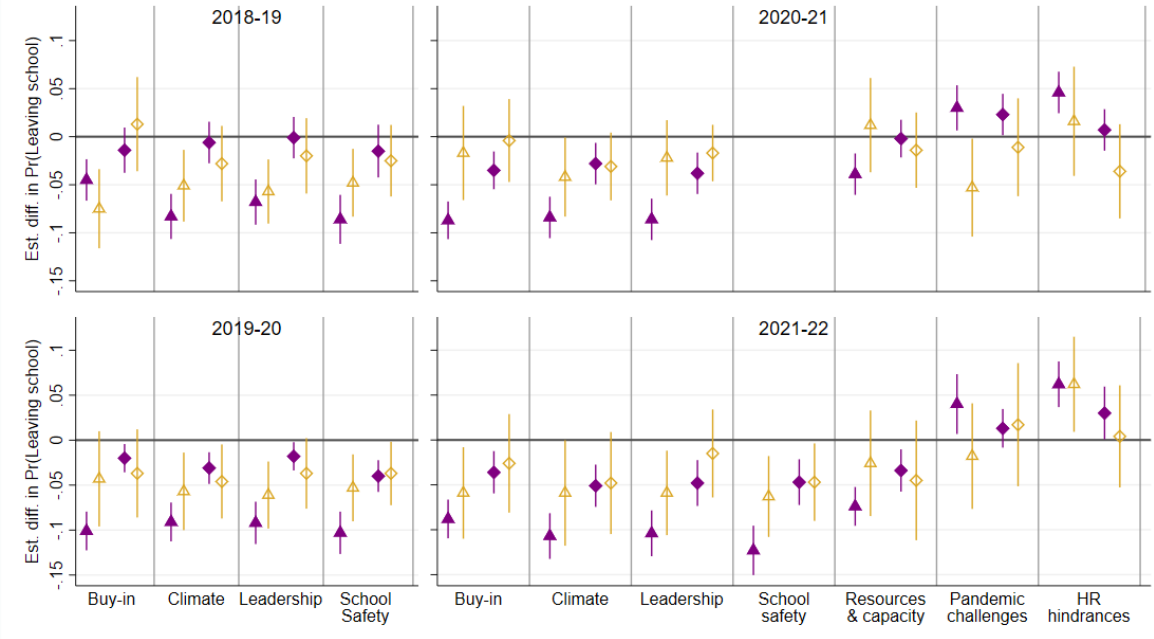
Note: Left panel displays intentions over time for the survey sample (N=7,714 teachers with both turnover and intent data), and right panel displays actual behavior—in alignment with intentions—in the survey sample.

Figure 1. School Organizational Commitment and Organizational Conditions Predictors of Intent and Actual Turnover Behavior (outcome=leave school for any pathway out)

Panel A. Estimates for all years, pooled



Panel B. Estimates separately by year



Note: Coefficient estimates from weighted, fully specified linear probability models predicting intent and actual turnover behavior, respectively, shown in Equation 3. Because constructs are included in models one at a time, each marker represents an estimate from a different model. Spikes denote 95% confidence intervals. Teacher measures (solid markers) are individual-level measures in which the school organizational condition measure and intent or actual turnover behavior measure comes from the same teacher survey. Peer measures (hollow markers) are jackknife measures based on the observed teacher's peers. Full regression results for Panel A provided in Appendix E.I (intent) and E.II (actual behavior). Full regression results for Panel B provided in Appendix E.III (intent) and E.IV (actual behavior).

Table 1. Regression Estimates on Intent as Predictor of Actual Turnover Behavior

Panel A. Full Sample, t+1 Only

	(1)	(2)	(3)	(4)	(5)	(6)
	Leave school, any		Transfer		Leave MI ed	
Transfer	0.212***	0.193***	0.174***	0.152***	0.029***	0.033***
	(0.019)	(0.018)	(0.018)	(0.016)	(0.007)	(0.007)
Leave education/retire	0.180***	0.179***	0.020	0.019	0.151***	0.153***
	(0.021)	(0.021)	(0.013)	(0.012)	(0.017)	(0.017)
N	7,505	7,505	7,505	7,505	7,505	7,505
R^2	0.066	0.172	0.050	0.168	0.076	0.132
Adjusted R^2	0.063	0.130	0.047	0.126	0.073	0.088
Within R^2		0.058		0.038		0.079
School FE		X		X		X

Panel B. 2018-19 and 2019-20 Response Cohorts Only, t+1, t+2, and t+3

	Leave school, any			Transfer			Leave MI ed		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	t+1	*t*+2	*t*+3	*t*+1	*t*+2	*t*+3	*t*+1	*t*+2	*t*+3
Expressed intent									
Transfer	0.139***	0.215***	0.237***	0.102***	0.147***	0.180***	0.022**	0.022**	0.022*
	(0.023)	(0.026)	(0.028)	(0.022)	(0.025)	(0.028)	(0.008)	(0.008)	(0.009)
Leave education/retire	0.196***	0.376***	0.352***	0.013	0.036	0.026	0.170***	0.178***	0.176***
	(0.030)	(0.037)	(0.036)	(0.018)	(0.022)	(0.023)	(0.024)	(0.025)	(0.025)
N	4,159	4,159	4,159	4,159	4,159	4,159	4,159	4,159	4,159
R^2	0.246	0.257	0.237	0.245	0.230	0.245	0.186	0.184	0.180
Adjusted R^2	0.178	0.190	0.168	0.176	0.160	0.177	0.112	0.110	0.106
Within R^2	0.047	0.082	0.072	0.023	0.034	0.044	0.099	0.101	0.096
School FE	X	X	X	X	X	X	X	X	X

Note: Regression coefficients from weighted linear probability models shown in Equation 1. All models include school demographics (economic disadvantage, English learners, special education, student race/ethnicity, logged enrollment), teacher characteristics (teacher race/ethnicity, gender, age), teacher certification type and experience, and school and year fixed effects. Models predicting transfer (Columns 3-4 in Panel A and 4-6 in Panel B) include control for intent to leave Michigan public education, so reference category is remaining in the school. Standard errors, clustered at the school level, in parentheses. Full regression results provided in Appendix C.III, with results from Panel A in C-2 and results from Panel B in C-3. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2. Regression Estimates on Intent as Predictor of Actual Turnover Behavior, by School Year

	Leave school, any				Transfer				Leave MI ed			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	2018-19	2019-20	2020-21	2021-22	2018-19	2019-20	2020-21	2021-22	2018-19	2019-20	2020-21	2021-22
Transfer	0.168***	0.121***	0.205***	0.279***	0.129**	0.100***	0.176***	0.192***	0.029	0.017*	0.026	0.071**
	(0.042)	(0.025)	(0.041)	(0.047)	(0.039)	(0.023)	(0.040)	(0.041)	(0.018)	(0.008)	(0.015)	(0.023)
Leave education/retire	0.216***	0.182***	0.135**	0.215***	-0.030	0.043*	0.031	0.021	0.200***	0.143***	0.097**	0.162***
	(0.056)	(0.036)	(0.042)	(0.050)	(0.028)	(0.021)	(0.026)	(0.040)	(0.047)	(0.029)	(0.030)	(0.036)
N	1832	2288	1928	1375	1832	2288	1928	1375	1832	2288	1928	1375
R^2	0.309	0.287	0.243	0.312	0.333	0.290	0.234	0.315	0.265	0.196	0.199	0.265
Adjusted R^2	0.180	0.189	0.129	0.176	0.209	0.192	0.118	0.180	0.128	0.085	0.078	0.121
Within R^2	0.049	0.048	0.056	0.089	0.028	0.024	0.047	0.064	0.108	0.092	0.050	0.085

Note: Regression coefficients from weighted linear probability models shown in Equation 1. All models include school demographics (economic disadvantage, English learners, special education, student race/ethnicity, logged enrollment), teacher characteristics (teacher race/ethnicity, gender, age), teacher certification type and experience, and school and year fixed effects. Models predicting transfer (Columns 5-8) include control for intent to leave Michigan public education, so reference category is remaining in the school. Standard errors, clustered at the school level, in parentheses. Full regression results in Appendix D, Table D-1. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3. School and Teacher Predictors of Turnover Intent and Behavior, selected coefficient estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	Leave school, any		Transfer		Leave MI ed/retire	
	Intent	Behavior	Intent	Behavior	Intent	Behavior
Student demographics						
Economically disadvantaged	0.187**	0.117*	0.172***	0.121**	0.015	-0.008
	(0.064)	(0.057)	(0.043)	(0.043)	(0.044)	(0.021)
English learners	-0.025	0.156	-0.007	0.131	-0.019	0.012
	(0.099)	(0.105)	(0.076)	(0.100)	(0.052)	(0.037)
Special education	0.067	-0.012	0.022	-0.016	0.045	-0.004
	(0.068)	(0.037)	(0.036)	(0.034)	(0.043)	(0.010)
Black	-0.013	-0.096	-0.037	-0.087	0.024	0.006
	(0.051)	(0.053)	(0.045)	(0.051)	(0.027)	(0.017)
Hispanic or Latino/a/x	-0.015	-0.234*	-0.071	-0.200	0.057	-0.000
	(0.111)	(0.111)	(0.087)	(0.106)	(0.058)	(0.043)
Asian, Pacific Islander, 2+	-0.009	-0.275	-0.109	-0.331*	0.101	0.019
races, Other	(0.156)	(0.162)	(0.134)	(0.147)	(0.071)	(0.050)
Enrollment (logged)	-0.001	-0.019	-0.003	-0.020*	0.002	0.004
	(0.009)	(0.010)	(0.006)	(0.009)	(0.004)	(0.003)
Teacher age						
Age <30	0.089***	0.026	0.063**	0.024	0.026	0.012
	(0.026)	(0.030)	(0.024)	(0.028)	(0.015)	(0.011)
Age 46-54	-0.018	-0.019	-0.029*	-0.020	0.011	0.000
	(0.015)	(0.013)	(0.013)	(0.011)	(0.008)	(0.005)
Age 55-59	0.010	-0.019	-0.046***	-0.016	0.055***	0.008
	(0.018)	(0.015)	(0.013)	(0.013)	(0.014)	(0.008)
Age 60+	0.081**	-0.002	-0.022	-0.029	0.103***	0.037***
	(0.025)	(0.020)	(0.020)	(0.015)	(0.019)	(0.011)
Constant	-0.017	0.279**	0.017	0.239**	-0.034	-0.004
	(0.072)	(0.096)	(0.053)	(0.084)	(0.042)	(0.023)
N	6,192	6,192	6,192	6,192	6,192	6,192
R^2	0.022	0.021	0.025	0.024	0.026	0.012
Adj R^2	0.018	0.017	0.022	0.021	0.022	0.009

Note: Regression coefficients from weighted linear probability models shown in Equation 2. Table presents only subset of variables discussed in main text. Tables including all coefficient estimates are provided in Appendix E.I (intent) and E.II (actual turnover behavior). All models include year fixed effects and controls for teacher demographics (race/ethnicity, gender), certification type (interim/temporary, legacy, and standard, with professional certification as the reference category), and experience (first-year teacher, and 1-3 years experience, with 4+ years as the reference category). Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4. School Organizational Commitment and Organizational Conditions Predictors of Actual Turnover Behavior with and without Intent as Partial Mediator (outcome=leave school for any pathway out)

	Teacher						Peer					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Buy-in		Climate		Leadership		Buy-in		Climate		Leadership	
Organizational condition construct	-0.028*** (0.006)	-0.012 (0.006)	-0.031*** (0.006)	-0.012* (0.006)	-0.028*** (0.006)	-0.010 (0.006)	-0.013 (0.012)	-0.002 (0.012)	-0.041*** (0.012)	-0.029* (0.011)	-0.022* (0.011)	-0.011 (0.010)
Intent to transfer		0.222*** (0.023)		0.222*** (0.023)		0.222*** (0.023)		0.224*** (0.022)		0.220*** (0.022)		0.219*** (0.022)
Intent to leave		0.172*** (0.025)		0.173*** (0.025)		0.174*** (0.025)		0.176*** (0.024)		0.174*** (0.024)		0.172*** (0.024)
N	6,192	6,192	6,192	6,192	6,192	6,192	6,072	6,072	6,038	6,038	6,006	6,006
R^2	0.027	0.076	0.028	0.076	0.027	0.075	0.017	0.070	0.021	0.072	0.019	0.069
Adjusted R^2	0.023	0.072	0.024	0.072	0.023	0.071	0.013	0.066	0.017	0.068	0.015	0.065

NOTE: Regression coefficients from weighted linear probability models shown in Equation 3 (odd-numbered columns) and 4 (even-numbered columns). All models include year fixed effects and controls for school covariates (school-level measures of student economic disadvantage, English learners, special education, race/ethnicity, and a logged function of enrollment), teacher demographics (race/ethnicity, gender), certification type (interim/temporary, legacy, and standard, with professional certification as the reference category), and experience (first-year teacher, and 1-3 years experience, with 4+ years as the reference category). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.00$

Appendix A. Sample and Data

I. Balance Tests Comparing Respondents and Non-Respondents

Table A-1. Differences from *t*-tests comparing survey respondents and non-respondents, standardized

	Respondents	Non-respondents	Diff	SE	*p*-value(diff)
Black	-0.188	0.059	-0.247***	0.028	0.000
Hispanic	0.000	-0.005	0.005	0.028	0.855
White	0.177	-0.052	0.230***	0.028	0.000
Other nonwhite	0.022	-0.001	0.023	0.028	0.413
Race unknown	-0.007	-0.014	0.007	0.027	0.804
Female	0.067	-0.013	0.080**	0.028	0.004
Elementary certified	-0.048	0.034	-0.081**	0.028	0.003
Secondary certified	0.050	-0.019	0.069*	0.028	0.014
New to teaching or district	0.110	-0.027	0.138***	0.028	0.000

NOTE: Table shows standardized differences between respondents and non-respondents.

Table A-2. Differences in respondents and non-respondents, controlling for school fixed effects

	(1) Black	(2) Hispanic	(3) White	(4) Other nonwhite	(5) Unknown	(6) Female	(7) Elem cert	(8) Sec cert	(9) New teacher
Coefficient	-0.044***	0.003	0.036***	0.007	0.002	0.021***	-0.009	0.002	0.030***
	(0.007)	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)
N	6171	6171	6171	6171	6171	6105	6171	6171	6171

NOTE: Coefficients from bivariate regression with respondent dummy on left side, dummy variable listed in column header on right side, and school FE. All differences are standardized.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A-3. Teacher Descriptive Statistics of Analytic Sample and Target Population

	(1) Sample unweighted	(2) Sample weighted	(3) Target population
Demographics			
Black	0.338	0.354	0.369
	(0.473)	(0.478)	(0.483)
Hispanic or Latinx	0.029	0.029	0.029
	(0.168)	(0.168)	(0.167)
Asian, Pacific Islander, 2+ races, Other	0.044	0.043	0.039
	(0.206)	(0.204)	(0.194)
Male	0.186	0.210	0.218
	(0.389)	(0.407)	(0.413)
Age <30	0.083	0.089	0.098
	(0.276)	(0.285)	(0.297)
Age 30-45	0.328	0.327	0.331
	(0.470)	(0.469)	(0.470)
Age 46-54	0.328	0.326	0.328
	(0.470)	(0.469)	(0.469)
Age 55-59	0.150	0.146	0.134
	(0.357)	(0.353)	(0.341)
Age 60+	0.110	0.112	0.109
	(0.313)	(0.315)	(0.312)
Certification			
Interim or temporary certification	0.031	0.034	0.033
	(0.174)	(0.182)	(0.178)
Legacy certification	0.041	0.040	0.045
	(0.199)	(0.196)	(0.208)
Standard certification	0.243	0.246	0.251
	(0.429)	(0.431)	(0.434)
Professional or advanced certification	0.678	0.671	0.656
	(0.467)	(0.470)	(0.475)
Experience			
First-year teacher	0.047	0.052	0.044
	(0.211)	(0.222)	(0.205)
1-3 years teaching experience	0.137	0.140	0.139
	(0.344)	(0.347)	(0.346)
>3 years teaching experience	0.816	0.809	0.817
	(0.387)	(0.393)	(0.387)
Observations	7,673	7,668	21,073

NOTE: Means with standard deviations in parentheses. Column 1 provides unweighted figures from the complete analytic sample (i.e., all teacher who responded to the intent question), Column 2 weighted figures from the complete analytic sample, and Column 3 unweighted figures from the full population of eligible Partnership district teachers.

II. Baseline Descriptive Statistics on Target Population

Table A-4. Student Characteristics in Partnership Districts and Other Districts Statewide, 2018-19

	Partnership Districts	All Other Districts
Panel A. Students		
White	8.7%	68.6%
Black or African American	73.7%	14.6%
Hispanic or Latino/a/x	13.1%	8.0%
Other non-white[1]	4.5%	8.8%
Economically disadvantaged[2]	89.4%	50.7%
English learner	10.8%	6.9%
Chronically absent[3]	56.0%	17.0%
Students with disabilities	17.4%	13.6%
N	*77,175*	*1,394,873*
Panel B. Teachers[4]		
First-year teacher	11.9%	5.9%
Early career (1-5) teachers	35.2%	27.3%
N	*4,166*	*85,353*

[1] This group includes students identified as American Indian, Asian, Native Hawaiian, or multiple races.
[2] Students are identified as economically disadvantaged if they are eligible for free/reduced meals, qualify for SNAP/TANF, are homeless, are migrant, or are in foster care.
[3] Students are identified as chronically absent if they are absent for more than 10% of eligible school days.
[4] We calculate experience as the number of years serving as a teacher in the Michigan public education system since fall 2011.

Appendix B. School Organizational Conditions Measures

This appendix provides factor loading tables from our confirmatory factor analysis (CFA). Before conducting the CFA, we began with an exploratory factor analysis (EFA) drawing from all question items related to work environment and organizational commitment. Within conceptually related items, we conducted parallel analyses (Horn, 1965) to determine number of factors and then used orthogonal varimax rotation to identify the separate factors. Then, drawing from the EFA findings, we ran CFAs and generated factor scores for each respondent with a mean of zero and a standard deviation of one. We used these scores in our regressions.

Table B-1. Factors, items, and years measured

Label	Construct	Items	Years
Improvement goal buy-in	Teachers buy-in to the school or district's improvement goals	Teachers' agreement that… • Goals are feasible • Goals focus on the most important issues facing the school • Goals help meet student needs • Staff focus on clear and concrete steps to improve student outcomes • Staff instructional efforts align with goals	2018-19 2019-20 2020-21 2021-22
Positive school climate[1]	Teachers report their school has a positive school climate	Teachers' agreement that … • The school meets student socioemotional needs • The school meets student academic needs • Teachers have strong rapport with students • Teachers have high expectations for students • Students are enthusiastic to learn	2018-19 2019-20 2020-21 2021-22
Effective school leadership	Teachers believe school leader is effective	Teachers' perceptions that principal is effective at… • Working with staff to meet curriculum standards • Communicating the central mission of the school • Making data-driven decisions • Working with community partners • Facilitating and encouraging teacher professional development • Encouraging parental engagement	2018-19 2019-20 2020-21 2021-22
Safe school and positive student behavior	Teachers believe their school is safe and student behavior is appropriate	Teachers' beliefs that … • The school has a safe and orderly environment • Students listen to staff • Teachers effectively manage student behavior • Teachers consistently enforce behavioral standards • Fights are frequent *(reverse-coded)*	2018-19 2019-20 2021-22
Human resources hindrances	Teachers believe human resources-related factors are hindrances to improvement goals	Teachers' perceptions that these hinder improvement … • Low teacher attendance • Low teacher retention • Lack of availability of substitute teachers • Insufficient supply of certified teachers	2020-21 2021-22

Label	Construct	Items	Years
Adequate teacher resources and capacity	Teachers believe they have resources and capacity they need to educate their students	Teachers agree they… • Are able to educate their students at least as well as in prior years • Have the data they need to target instruction • Have the resources they need to adequately serve students	2020-21 2021-22
Student pandemic challenges	Teachers believe their students faced challenges caused/exacerbated by the pandemic	Teachers believe their students face challenges related to… • Access to health care • Mental health • Access to mental health care • Food insecurity • Homelessness or housing instability	2020-21 2021-22

[1] Because the survey was administered in 2020-21 when most Partnership district schools were operating remotely and the survey that year avoided questions that were not relevant in a remote learning pandemic context, this construct includes only a subset of typical school climate items.

Table B-2. Improvement Goal Buy-in Factor Loadings

	Loadings	ψ
Goals are feasible	0.805	0.351
Goals focus on most important issues facing school	0.874	0.235
Goals help meet needs of students	0.881	0.224
Clear and concrete steps to improve student outcomes	0.835	0.303
Efforts align with goals	0.824	0.321
N	9206	
α	0.899	

Table B-3. Positive School Climate Factor Loadings

	Loadings	ψ
Meet socioemotional needs	0.705	0.502
Meet academic needs	0.805	0.353
Teachers have strong rapport with students	0.735	0.460
Teachers have high expectations for students	0.752	0.434
Students enthusiastic to come to school	0.680	0.538
N	8422	
α	0.781	

Table B-4. Effective School Leadership Factor Loadings

	Loadings	ψ
Leader effectiveness: work with staff to meet curriculum standards	0.898	0.193
Leader effectiveness: communicate central mission of the school	0.894	0.201
Leader effectiveness: use evidence to make data-driven decisions	0.895	0.200
Leader effectiveness: work with community partners	0.866	0.250
Leader effectiveness: facilitate and encourage PD	0.884	0.218
Leader effectiveness: encourage parental engagement	0.866	0.251
N	7853	
α	0.944	

Table B-5. Human Resources Hindrances Factor Loadings

	Loadings	ψ
To what extent a hindrance: low teacher attendance	0.778	0.394
To what extent a hindrance: low teacher retention	0.855	0.268
To what extent a hindrance: Lack of availability of substitute teachers	0.771	0.406
To what extent a hindrance: insufficient supply of certified teachers	0.804	0.354
N	3814	
Alpha	0.809	

Table B-6. Student Pandemic Challenges Factor Loadings

	Loadings	ψ
Challenges: Access to healthcare	0.815	0.336
Challenges: Mental health	0.797	0.365
Challenges: Access to mental health care	0.854	0.270
Challenges: Food insecurity	0.797	0.365
Challenges: Homelessness or housing instability	0.771	0.405
N	2177	
α	0.861	

Table B-7. Sufficient Teacher Resources and Capacity Factor Loadings

	Loadings	ψ
Able to educate students at least as well as prior years	0.796	0.367
Have data and information to target instruction	0.837	0.299
Have resources to adequately serve students	0.802	0.357
N	3813	
α	0.740	

Table B-8. Safe School and Positive Student Behavior Factor Loadings

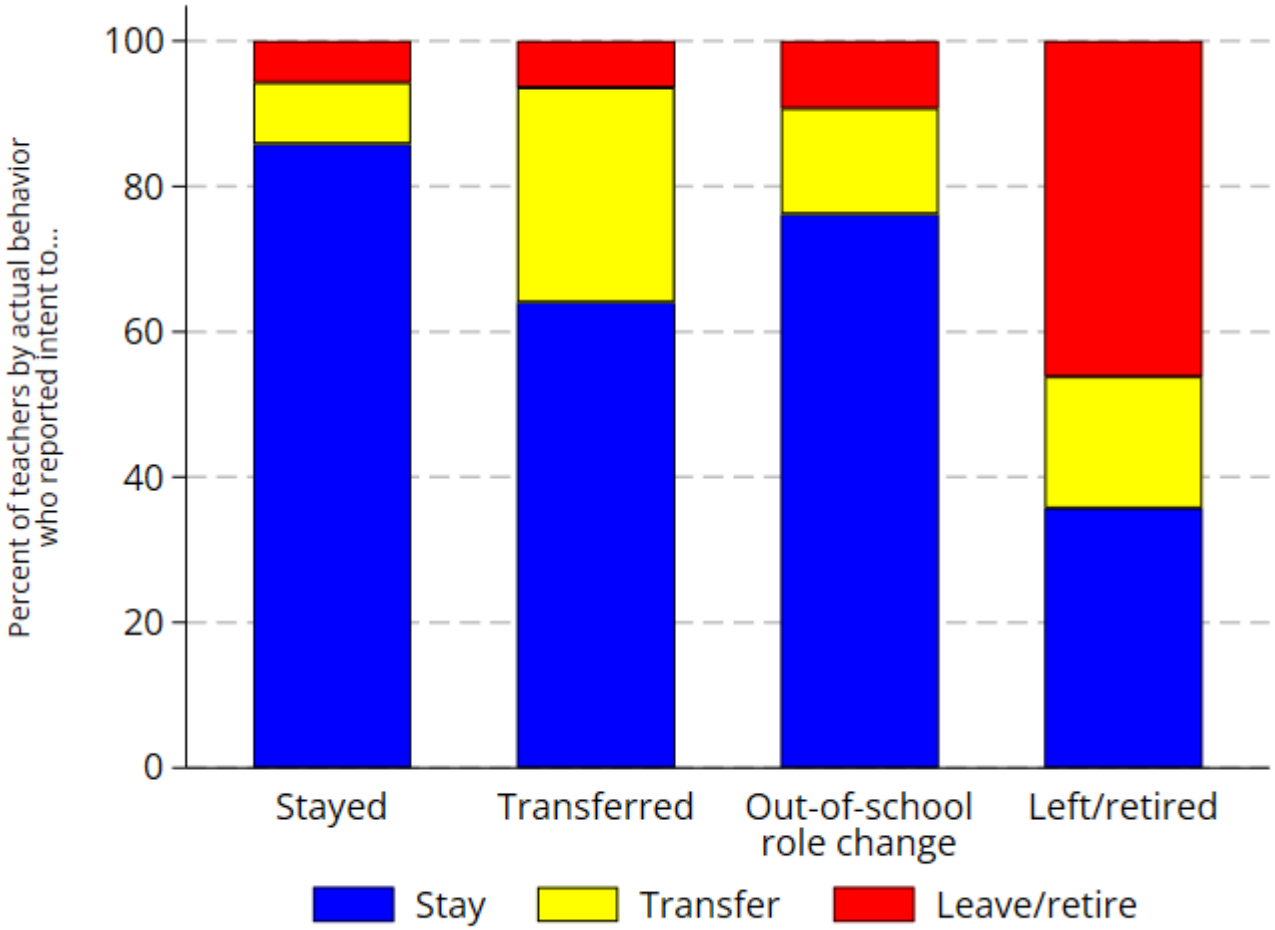
	Loadings	ψ
Safe and orderly environment	0.851	0.276
Fights are frequent (reverse-coded)	0.680	0.538
Teachers consistently enforce behavioral standards	0.661	0.563
Students listen to staff	0.772	0.404
Teachers manage behavior	0.825	0.319
N	6292	
α	0.809	

Note: Factors created using principal components factors. In last column, ψ denotes the uniqueness, which is the remaining variation in the item not captured by the factor.

Appendix C. Findings: RQ1: Intent as a Predictor of Actual Turnover Behavior

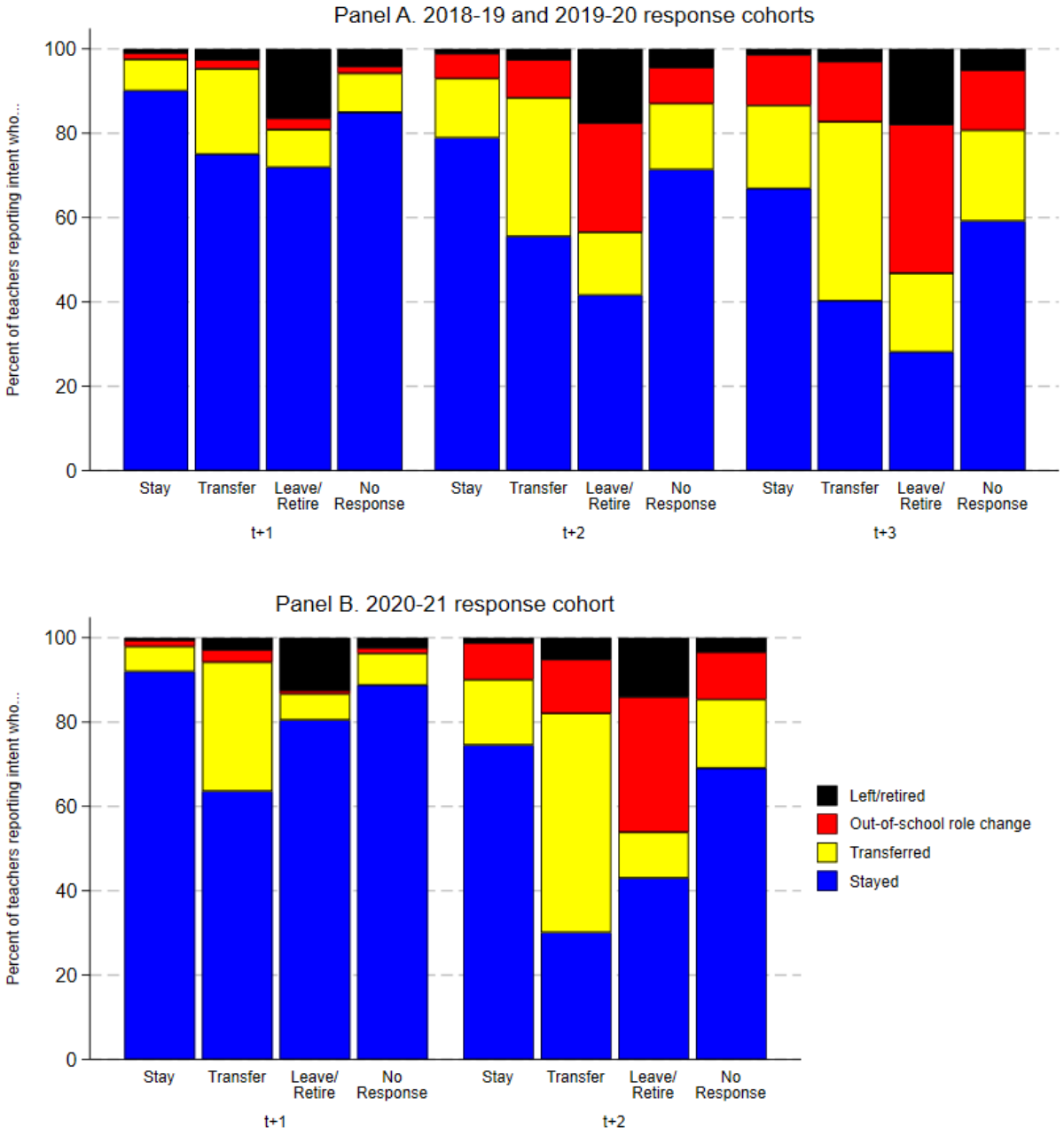
I. Alternative Descriptive Crosstabulation Results

Figure C-1. Reported Intent by Actual Turnover Behavior, 2019-19 through 2021-22



N=7,714 teachers with intent and behavior data (first 3 bars).
Note: Individual bars represent the full sample of teachers who actually stayed, transferred, changed roles, or left/retired, respectively. Bar section heights denote share of teachers in each category who reported an intent to stay in their school, transfer, or leave/retire.

Figure C-2. Actual Turnover Behavior by Reported Intent in t+1, t+2, and t+3



Note: Graphs track survey response cohorts over time (t+1, t+2, t+3) based on expressed intention or nonresponse in year t. First panel shows 2018-19 and 2019-20 respondents' actual behavior one, two, and three years after their (non)responses. Second panel shows 2020-21 respondents' actual behavior one and two years after their (non)responses. Individual bars represent the sample of teachers reporting plans to stay in their school, transfer, leave/retire, or who did not respond, respectively. Bar section heights denote share of teachers who reported that plan who stayed in their school, transferred, left the school but switched to a non-teaching role, and left Michigan public education as of each year.

II. Models Including Nonrespondents

Table C-1. Regressions predicting actual turnover behavior as a function of intent including nonresponse as a category

	Leave school, any		Transfer		Leave MI/retire	
	(1) Exclude NR	(2) Include NR	(3) Exclude NR	(4) Include NR	(5) Exclude NR	(6) Include NR
Transfer	0.192***	0.187***	0.155***	0.159***	0.033***	0.024***
	(0.018)	(0.018)	(0.016)	(0.016)	(0.007)	(0.007)
Leave education/retire	0.180***	0.172***	0.036**	0.038**	0.153***	0.142***
	(0.021)	(0.021)	(0.013)	(0.012)	(0.017)	(0.017)
No response		0.053***		0.019***		0.038***
		(0.005)		(0.004)		(0.003)
N	7,510	20,561	7,510	20,561	7,510	20,561
R^2	0.173	0.104	0.172	0.108	0.132	0.070
Adjusted R^2	0.132	0.088	0.130	0.092	0.089	0.053
Within R^2	0.059	0.032	0.041	0.024	0.080	0.045

NOTE: Regression coefficients from unweighted linear probability models shown in Equation 1. All models school demographics (economic disadvantage, English learners, special education, student race/ethnicity, logged enrollment), teacher demographics (race/ethnicity, gender), certification type (interim/temporary, legacy, and standard, with professional certification as the reference category), experience (first-year teacher, and 1-3 years experience, with 4+ years as the reference category), and school and year fixed effects. Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

III. Full Model Results from Models Included with Abbreviated Results in Main Manuscript (Table 1; Figure 4)

Table C-2. Full Regression Estimates from Models Predicting Behavior as a Function of Intent and Other Covariates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Leave school, any				Transfer				Leave MI ed		
Expressed intent												
Transfer	0.220***	0.218***	0.212***	0.193***	0.182***	0.180***	0.174***	0.152***	0.029***	0.029***	0.029***	0.033***
	(0.020)	(0.019)	(0.019)	(0.018)	(0.018)	(0.018)	(0.018)	(0.016)	(0.007)	(0.007)	(0.007)	(0.007)
Leave education/retire	0.177***	0.177***	0.180***	0.179***	0.016	0.016	0.020	0.019	0.155***	0.155***	0.151***	0.153***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.013)	(0.013)	(0.013)	(0.012)	(0.017)	(0.017)	(0.017)	(0.017)
School demographics												
Economically disadvantaged share		0.081	0.075	-0.020		0.094*	0.087*	0.065		-0.014	-0.016	-0.053
		(0.048)	(0.047)	(0.126)		(0.037)	(0.036)	(0.104)		(0.018)	(0.018)	(0.053)
English learner share		0.057	0.072	-0.687**		0.039	0.056	-0.434*		-0.003	0.001	-0.078
		(0.105)	(0.103)	(0.258)		(0.095)	(0.094)	(0.199)		(0.029)	(0.029)	(0.139)
Special education share		-0.008	0.001	0.018		-0.011	0.000	0.051		-0.006	-0.008	0.014
		(0.033)	(0.033)	(0.224)		(0.027)	(0.027)	(0.213)		(0.014)	(0.014)	(0.087)
Black share		-0.087*	-0.070	0.201		-0.069	-0.049	0.158		-0.004	0.001	0.030
		(0.041)	(0.041)	(0.320)		(0.037)	(0.038)	(0.328)		(0.014)	(0.014)	(0.072)
Hispanic or Latinx share		-0.109	-0.117	-0.078		-0.072	-0.077	0.006		0.005	0.003	-0.048
		(0.093)	(0.092)	(0.391)		(0.081)	(0.081)	(0.372)		(0.034)	(0.034)	(0.151)
Asian, Pacific Islander, 2+ races, Other share		-0.156	-0.165	-0.193		-0.145	-0.155	-0.210		-0.014	-0.014	-0.127
		(0.135)	(0.132)	(0.587)		(0.117)	(0.115)	(0.511)		(0.042)	(0.042)	(0.229)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Leave school, any				Transfer				Leave MI ed		
Enrollment (logged)		-0.013	-0.013	0.016		-0.011	-0.011	0.006		-0.001	-0.001	0.008
		(0.008)	(0.008)	(0.042)		(0.006)	(0.006)	(0.040)		(0.003)	(0.003)	(0.015)
Teacher characteristics												
Black			-0.016	-0.008			-0.021*	-0.018*			-0.007	-0.007
			(0.009)	(0.010)			(0.008)	(0.009)			(0.004)	(0.005)
Hispanic or Latinx			0.017	-0.053			0.004	-0.067*			-0.003	-0.002
			(0.033)	(0.029)			(0.029)	(0.028)			(0.010)	(0.012)
Asian, Pacific Islander, 2+ races, Other			-0.010	-0.018			-0.002	-0.006			-0.018**	-0.020**
			(0.020)	(0.020)			(0.017)	(0.018)			(0.006)	(0.007)
Male			0.006	0.014			0.006	0.011			0.002	0.004
			(0.010)	(0.010)			(0.008)	(0.009)			(0.004)	(0.005)
Age <30			0.022	0.019			0.008	0.008			0.021**	0.019*
			(0.018)	(0.017)			(0.016)	(0.015)			(0.008)	(0.009)
Age 46-54			-0.013	-0.004			-0.007	-0.001			-0.000	-0.000
			(0.010)	(0.010)			(0.009)	(0.008)			(0.004)	(0.004)
Age 55-59			-0.017	-0.006			-0.004	0.007			0.001	0.001
			(0.012)	(0.013)			(0.011)	(0.011)			(0.006)	(0.006)
Age 60+			-0.006	0.011			-0.013	-0.001			0.023**	0.028***
			(0.014)	(0.015)			(0.011)	(0.012)			(0.008)	(0.008)
Teacher certification												
Interim or			0.056*	0.052			0.055*	0.051*			0.019	0.021

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Leave school, any				Transfer				Leave MI ed		
temporary certification			(0.027)	(0.026)			(0.023)	(0.023)			(0.012)	(0.013)
Legacy certification			-0.004	-0.005			-0.033*	-0.033*			0.021	0.019
			(0.021)	(0.021)			(0.014)	(0.014)			(0.016)	(0.015)
Standard certification			0.010	0.003			0.017	0.013			-0.007	-0.010*
			(0.010)	(0.010)			(0.009)	(0.009)			(0.004)	(0.005)
Constant	0.126***	0.214*	0.213*	-0.010	0.094***	0.143*	0.140*	-0.063	0.014***	0.037	0.032	0.006
	(0.013)	(0.085)	(0.084)	(0.410)	(0.012)	(0.059)	(0.059)	(0.390)	(0.003)	(0.026)	(0.026)	(0.137)
N	7,505	7,505	7,505	7,505	7,505	7,505	7,505	7,505	7,505	7,505	7,505	7,505
R^2	0.060	0.062	0.066	0.172	0.042	0.045	0.050	0.168	0.070	0.070	0.076	0.132
Adjusted R^2	0.059	0.061	0.063	0.130	0.042	0.044	0.047	0.126	0.069	0.068	0.073	0.088
Within R^2				0.058				0.038				0.079
School FE				X				X				X

Note: Regression coefficients from weighted linear probability models shown in Equation 1. All models include year fixed effects in addition to the variables shown in the table. Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. These are the full estimates associated with Table 1, Panel A, of the main document. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C-3. Full Regression Estimates from Models Predicting Behavior in *t*+1, *t*+2, and *t*+3 as a Function of Intent and Other Covariates, 2018-19 and 2019-20 Response Cohorts Only

	Leave school, any			Transfer			Leave MI ed		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	t+1	*t*+2	*t*+3	*t*+1	*t*+2	*t*+3	*t*+1	*t*+2	*t*+3
Expressed intent									
Transfer	0.139***	0.215***	0.237***	0.102***	0.147***	0.180***	0.022**	0.022**	0.022*
	(0.023)	(0.026)	(0.028)	(0.022)	(0.025)	(0.028)	(0.008)	(0.008)	(0.009)
Leave education/retire	0.196***	0.376***	0.352***	0.013	0.036	0.026	0.170***	0.178***	0.176***
	(0.030)	(0.037)	(0.036)	(0.018)	(0.022)	(0.023)	(0.024)	(0.025)	(0.025)
School demographics									
Economically disadvantaged	-0.066	-0.282	-0.493	0.106	0.216	0.097	-0.121	-0.112	-0.097
	(0.247)	(0.272)	(0.319)	(0.230)	(0.265)	(0.270)	(0.080)	(0.082)	(0.085)
English learner	-0.711	0.135	-0.245	-0.536*	-0.613	-0.596	-0.069	-0.047	-0.172
	(0.383)	(0.477)	(0.586)	(0.262)	(0.362)	(0.421)	(0.231)	(0.235)	(0.278)
Special education	0.246	0.445	-0.029	0.359	0.771	0.543	-0.176	-0.244	-0.351
	(0.492)	(0.522)	(0.546)	(0.487)	(0.574)	(0.598)	(0.151)	(0.169)	(0.186)
Black	0.025	0.405	0.721	-0.223	-0.293	-0.115	0.217	0.203	0.272
	(0.525)	(0.498)	(0.539)	(0.491)	(0.582)	(0.676)	(0.166)	(0.176)	(0.216)
Hispanic or Latino/a/x	0.417	-0.306	0.154	-0.078	-0.482	-0.281	0.467	0.306	0.353
	(0.649)	(0.810)	(0.938)	(0.602)	(0.695)	(0.792)	(0.245)	(0.273)	(0.283)
Asian, Pacific Islander, 2+ races, Other	1.660	1.159	-0.697	0.777	0.870	0.348	0.276	0.089	0.412
	(1.323)	(1.423)	(1.433)	(1.212)	(1.398)	(1.758)	(0.383)	(0.410)	(0.544)
Enrollment (logged)	-0.022	0.095	0.076	-0.062	-0.028	-0.018	0.029	0.025	0.035
	(0.135)	(0.117)	(0.122)	(0.116)	(0.151)	(0.146)	(0.035)	(0.035)	(0.035)
Teacher characteristics									
Black	0.005	0.008	-0.015	-0.006	-0.011	-0.045*	-0.003	0.002	-0.001
	(0.015)	(0.021)	(0.024)	(0.012)	(0.016)	(0.017)	(0.007)	(0.008)	(0.008)

	Leave school, any			Transfer			Leave MI ed		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	t+1	*t*+2	*t*+3	*t*+1	*t*+2	*t*+3	*t*+1	*t*+2	*t*+3
Hispanic or Latino/a/x	-0.073*	-0.085	-0.086	-0.067**	-0.071	-0.110**	-0.031**	-0.030**	-0.032**
	(0.029)	(0.044)	(0.057)	(0.025)	(0.040)	(0.042)	(0.010)	(0.010)	(0.010)
Asian, Pacific Islander,	-0.011	-0.001	-0.028	-0.015	-0.020	-0.042	-0.017	-0.017	-0.020
2+ races, Other	(0.030)	(0.037)	(0.042)	(0.025)	(0.028)	(0.032)	(0.012)	(0.012)	(0.012)
Male	0.002	0.036	0.033	0.006	0.021	0.020	0.009	0.003	0.004
	(0.013)	(0.021)	(0.024)	(0.012)	(0.017)	(0.019)	(0.007)	(0.007)	(0.008)
Age <30	-0.001	0.068	0.097*	-0.003	0.007	-0.010	0.020	0.023	0.027
	(0.026)	(0.038)	(0.041)	(0.024)	(0.033)	(0.039)	(0.016)	(0.016)	(0.016)
Age 46-54	-0.002	-0.032	-0.015	-0.005	-0.035*	-0.043*	0.002	0.006	0.009
	(0.015)	(0.019)	(0.022)	(0.014)	(0.017)	(0.018)	(0.005)	(0.006)	(0.006)
Age 55-59	0.017	0.015	0.056	0.005	-0.025	-0.042*	0.015	0.021	0.023
	(0.020)	(0.026)	(0.030)	(0.015)	(0.019)	(0.020)	(0.012)	(0.012)	(0.012)
Age 60+	0.028	0.060*	0.123***	-0.014	-0.040*	-0.070***	0.043**	0.054***	0.067***
	(0.022)	(0.028)	(0.033)	(0.015)	(0.019)	(0.019)	(0.013)	(0.015)	(0.016)
Teacher certification									
Interim or temporary	0.128*	0.178**	0.209***	0.057	0.062	0.047	0.072	0.075	0.075
certification	(0.060)	(0.059)	(0.056)	(0.043)	(0.050)	(0.053)	(0.039)	(0.040)	(0.040)
Legacy certification	-0.008	0.007	0.023	-0.037*	-0.050*	-0.050*	0.016	0.010	0.008
	(0.028)	(0.037)	(0.043)	(0.017)	(0.021)	(0.023)	(0.022)	(0.022)	(0.023)
Standard certification	0.006	-0.006	-0.003	0.014	0.015	0.035	-0.019*	-0.020*	-0.022**
	(0.016)	(0.019)	(0.023)	(0.014)	(0.018)	(0.021)	(0.008)	(0.008)	(0.008)
Constant	0.175	-0.491	-0.145	0.499	0.273	0.273	-0.253	-0.188	-0.294
	(1.137)	(1.012)	(1.059)	(1.016)	(1.292)	(1.303)	(0.323)	(0.333)	(0.358)
N	4159	4159	4159	4159	4159	4159	4159	4159	4159
R^2	0.246	0.257	0.237	0.245	0.230	0.245	0.186	0.184	0.180
Adjusted R^2	0.178	0.190	0.168	0.176	0.160	0.177	0.112	0.110	0.106

	Leave school, any			Transfer			Leave MI ed		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	t+1	*t*+2	*t*+3	*t*+1	*t*+2	*t*+3	*t*+1	*t*+2	*t*+3
Within R^2	0.047	0.082	0.072	0.023	0.034	0.044	0.099	0.101	0.096

Note: Regression coefficients from weighted linear probability models shown in Equation 1. All models include school and year fixed effects in addition to the variables shown in the table. Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. Sample restricted to 2018-19 and 2019-20 response cohorts only. These are the full estimates associated with Table 1, Panel B, and Figure 4 of the main document. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

IV. Models Investigating Role of Alternative Employment Opportunities

Table C-4. Regression Estimates from Models Predicting Behavior as a Function of Intent by Subject Area

	Left school			Left district			Left MI ed		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	STEM	SpEd	Other	STEM	SpEd	Other	STEM	SpEd	Other
Expressed intent									
Transfer	0.275***	0.216***	0.158***	0.244***	0.142***	0.115***	0.020	0.031	0.040**
	(0.039)	(0.045)	(0.029)	(0.036)	(0.040)	(0.027)	(0.016)	(0.018)	(0.012)
Leave education/retire	0.183***	0.250***	0.176***	0.044	0.074*	-0.004	0.156***	0.148***	0.150***
	(0.041)	(0.039)	(0.032)	(0.030)	(0.033)	(0.018)	(0.036)	(0.028)	(0.028)
Teacher characteristics									
Economically disadvantaged share	-0.125	0.083	0.146	0.136	0.242	0.092	-0.115	-0.017	0.034
	(0.269)	(0.231)	(0.172)	(0.244)	(0.178)	(0.137)	(0.095)	(0.109)	(0.116)
English learner share	-0.281	-0.834	-0.357	-0.059	-0.718	-0.155	-0.148	-0.132	0.103
	(0.508)	(0.490)	(0.399)	(0.504)	(0.422)	(0.269)	(0.135)	(0.163)	(0.296)
Special education share	-0.405	0.111	-0.020	-0.279	0.340	0.068	-0.115	0.135	-0.093
	(0.547)	(0.793)	(0.302)	(0.510)	(0.450)	(0.265)	(0.178)	(0.158)	(0.109)
Black share	0.177	-1.413	0.092	0.240	-1.081	0.031	-0.053	-0.265	0.248
	(0.567)	(0.903)	(0.404)	(0.545)	(0.798)	(0.296)	(0.060)	(0.324)	(0.188)
Hispanic or Latinx share	0.613	-0.589	-1.125	0.727	-0.120	-0.995	-0.457	-0.313	0.182
	(0.807)	(1.047)	(0.594)	(0.750)	(0.805)	(0.554)	(0.299)	(0.344)	(0.346)

	Left school			Left district			Left MI ed		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	STEM	SpEd	Other	STEM	SpEd	Other	STEM	SpEd	Other
Asian, Pacific Islander, 2+ races, Other share	0.168	0.222	-0.212	0.011	-0.359	-0.038	0.060	-0.365	0.239
	(1.247)	(1.022)	(0.902)	(1.072)	(0.882)	(0.716)	(0.449)	(0.364)	(0.336)
Enrollment (logged)	0.137	0.038	-0.014	0.060	0.040	-0.012	0.067*	-0.027	0.001
	(0.079)	(0.081)	(0.055)	(0.081)	(0.083)	(0.050)	(0.026)	(0.037)	(0.021)
Black	0.039	-0.031	-0.010	0.027	-0.022	-0.026	-0.008	-0.012	-0.006
	(0.024)	(0.024)	(0.018)	(0.023)	(0.022)	(0.016)	(0.011)	(0.011)	(0.007)
Hispanic or Latinx	-0.029	-0.060	-0.023	-0.070*	-0.037	-0.071*	0.021	-0.031*	0.028
	(0.050)	(0.064)	(0.033)	(0.035)	(0.066)	(0.033)	(0.056)	(0.015)	(0.027)
Asian, Pacific Islander, 2+ races, Other	-0.049	0.006	-0.056	-0.019	0.019	-0.048	-0.027	-0.032**	-0.028**
	(0.053)	(0.039)	(0.032)	(0.052)	(0.032)	(0.030)	(0.021)	(0.012)	(0.010)
Male	0.015	0.033	0.010	0.023	0.032	-0.005	0.011	0.013	-0.002
	(0.023)	(0.030)	(0.017)	(0.023)	(0.028)	(0.013)	(0.013)	(0.014)	(0.008)
Age <30	-0.054	0.025	0.019	-0.041	0.011	0.017	0.016	0.065	0.002
	(0.041)	(0.059)	(0.028)	(0.036)	(0.049)	(0.024)	(0.024)	(0.036)	(0.011)
Age 46-54	-0.007	-0.012	0.013	0.012	0.010	0.011	-0.008	-0.004	0.001
	(0.023)	(0.029)	(0.017)	(0.021)	(0.024)	(0.014)	(0.008)	(0.009)	(0.006)
Age 55-59	0.017	0.036	-0.011	0.035	0.039	0.013	-0.004	0.005	0.001
	(0.030)	(0.028)	(0.023)	(0.028)	(0.023)	(0.018)	(0.010)	(0.011)	(0.014)
Age 60+	0.027	0.032	-0.011	0.026	0.021	-0.008	0.015	0.046**	0.017
	(0.036)	(0.034)	(0.026)	(0.033)	(0.028)	(0.019)	(0.019)	(0.016)	(0.015)
Teacher certification									
Interim or temporary certification	0.080	0.122	0.028	0.090	0.123	0.029	-0.008	0.002	0.026
	(0.058)	(0.113)	(0.035)	(0.062)	(0.103)	(0.031)	(0.031)	(0.016)	(0.019)

	Left school			Left district			Left MI ed		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	STEM	SpEd	Other	STEM	SpEd	Other	STEM	SpEd	Other
Legacy	-0.016	-0.038	-0.019	-0.035	-0.062*	-0.043*	0.001	0.026	-0.002
certification	(0.054)	(0.035)	(0.030)	(0.045)	(0.025)	(0.021)	(0.018)	(0.030)	(0.019)
Standard	0.033	0.012	-0.005	0.032	0.021	0.018	0.002	-0.023	-0.016
certification	(0.031)	(0.025)	(0.018)	(0.029)	(0.023)	(0.014)	(0.010)	(0.013)	(0.009)
Constant	-0.812	0.912	0.232	-0.679	0.345	0.218	-0.180	0.433	-0.218
	(0.677)	(1.069)	(0.536)	(0.674)	(0.871)	(0.456)	(0.169)	(0.457)	(0.227)
N	1909	1850	3875	1909	1850	3875	1909	1850	3875
R^2	0.308	0.313	0.209	0.280	0.317	0.212	0.274	0.284	0.160
Adj R^2	0.189	0.197	0.138	0.156	0.201	0.141	0.150	0.163	0.084
Within R^2	0.100	0.084	0.048	0.083	0.049	0.030	0.090	0.123	0.070

Note: Regression coefficients from weighted linear probability models shown in Equation 1 but estimated separately for teachers with STEM (Column 1, 4, 7), special education (Column 2, 5, 8) and neither (Column 3, 6, 9) endorsements. All models include school and year fixed effects in addition to the variables shown in the table. Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C-5. Regressions predicting actual turnover behavior as a function of intent, with and without unemployment rate covariate

	(1) Leave school, any	(2)	(3) Transfer	(4)	(5) Leave MI/retire	(6)
Transfer	0.229***	0.229***	0.193***	0.193***	0.035***	0.035***
	(0.022)	(0.022)	(0.021)	(0.021)	(0.009)	(0.009)
Leave education/retire	0.179***	0.179***	0.037*	0.037*	0.145***	0.145***
	(0.024)	(0.024)	(0.017)	(0.017)	(0.018)	(0.018)
County unemployment rate		0.001		0.005		-0.001
		(0.004)		(0.004)		(0.002)
N	6,192	6,192	6,192	6,192	6,192	6,192
R^2	0.075	0.075	0.067	0.068	0.070	0.070
Adjusted R^2	0.071	0.071	0.063	0.064	0.066	0.066

NOTE: Regression coefficients from weighted linear probability models shown in Equation 1, adding county unemployment rate in Columns 2, 4, and 6. All models include school fixed effects, year fixed effects, school demographics (economic disadvantage, English learners, special education, student race/ethnicity, logged enrollment), teacher demographics (race/ethnicity, gender), certification type (interim/temporary, legacy, and standard, with professional certification as the reference category), and experience (first-year teacher, and 1-3 years experience, with 4+ years as the reference category). Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C-6. Regressions predicting actual turnover behavior as a function of intent by county unemployment rate

	(1) Leave school, any	(2)	(3) Transfer	(4)	(5) Leave MI/retire	(6)
Transfer	0.222***	0.198***	0.192***	0.161***	0.026**	0.031***
	(0.024)	(0.023)	(0.022)	(0.021)	(0.008)	(0.009)
Leave education/retire	0.176***	0.182***	0.041*	0.040*	0.136***	0.143***
	(0.023)	(0.024)	(0.017)	(0.017)	(0.017)	(0.017)
Low unemployment	-0.001	0.027	-0.011	0.029	-0.004	-0.001
	(0.017)	(0.029)	(0.015)	(0.029)	(0.004)	(0.015)
Transfer X Low unemployment	-0.054	-0.033	-0.071	-0.045	0.020	0.021
	(0.045)	(0.048)	(0.038)	(0.039)	(0.019)	(0.020)
Leave education/retire X Low unemployment	0.064	0.042	0.002	0.001	0.071	0.050
	(0.069)	(0.070)	(0.042)	(0.039)	(0.056)	(0.057)
N	7511	7505	7511	7505	7511	7505
R^2	0.068	0.180	0.057	0.181	0.072	0.140
Adjusted R^2	0.065	0.139	0.054	0.140	0.069	0.097
Within R^2		0.059		0.042		0.076
School FE		X		X		X

NOTE: Regression coefficients from weighted linear probability models building on Equation 1 in manuscript, interacting each intent variable with the "low unemployment" indicator. "Low unemployment" is an indicator that takes a value of one for teachers in schools in counties that have an unemployment rate below the national average in a given year. Reference category is therefore teachers in counties at or above the national average unemployment rate. All models include year fixed effects, school demographics (economic disadvantage, English learners, special education, student race/ethnicity, logged enrollment), teacher demographics (race/ethnicity, gender), certification type (interim/temporary, legacy, and standard, with professional certification as the reference category), and experience (first-year teacher, and 1-3 years experience, with 4+ years as the reference category). Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix D. Findings: RQ2: Differences Pre-Pandemic and Pandemic Era

Table D-1. Regression Estimates from Weighted Linear Probability Models Predicting Behavior as a Function of Intent by Year

	Leave school, any	Transfer							Leave MI ed			
	(1) 2018-19	(2) 2019-20	(3) 2020-21	(4) 2021-22	(5) 2018-19	(6) 2019-20	(7) 2020-21	(8) 2021-22	(9) 2018-19	(10) 2019-20	(11) 2020-21	(12) 2021-22
Expressed intent												
Transfer	0.168***	0.121***	0.205***	0.279***	0.129**	0.100***	0.176***	0.192***	0.029	0.017*	0.026	0.071**
	(0.042)	(0.025)	(0.041)	(0.047)	(0.039)	(0.023)	(0.040)	(0.041)	(0.018)	(0.008)	(0.015)	(0.023)
Leave education/retire	0.216***	0.182***	0.135**	0.215***	-0.030	0.043*	0.031	0.021	0.200***	0.143***	0.097**	0.162***
	(0.056)	(0.036)	(0.042)	(0.050)	(0.028)	(0.021)	(0.026)	(0.040)	(0.047)	(0.029)	(0.030)	(0.036)
Teacher characteristics												
Black	0.011	-0.003	0.002	-0.032	-0.007	-0.014	-0.019	-0.050	-0.001	-0.003	-0.000	-0.013
	(0.024)	(0.017)	(0.022)	(0.031)	(0.020)	(0.014)	(0.018)	(0.029)	(0.010)	(0.009)	(0.008)	(0.013)
Hispanic or Latino/a/x	-0.050	-0.094**	-0.080	0.045	-0.070*	-0.058*	-0.083	-0.026	-0.030*	-0.039*	-0.006	0.089
	(0.042)	(0.033)	(0.062)	(0.069)	(0.034)	(0.026)	(0.059)	(0.064)	(0.015)	(0.017)	(0.007)	(0.054)
Asian, Pacific Islander, 2+ races, Other	-0.010	-0.016	0.020	-0.067	-0.012	-0.022	0.024	-0.051	-0.011	-0.021**	-0.001	-0.025
	(0.049)	(0.030)	(0.040)	(0.043)	(0.039)	(0.029)	(0.035)	(0.040)	(0.022)	(0.008)	(0.016)	(0.016)
Male	0.004	-0.005	0.025	0.014	0.011	-0.006	0.010	0.012	0.012	0.008	-0.004	-0.007
	(0.024)	(0.017)	(0.021)	(0.026)	(0.021)	(0.014)	(0.017)	(0.026)	(0.012)	(0.009)	(0.005)	(0.014)
Age <30	-0.052	0.038	0.076*	0.002	-0.043	-0.001	0.045	0.017	0.032	0.024	0.040	-0.021
	(0.044)	(0.030)	(0.037)	(0.041)	(0.040)	(0.027)	(0.032)	(0.035)	(0.032)	(0.013)	(0.021)	(0.022)
Age 46-54	-0.061*	0.039*	0.024	-0.017	-0.040	0.019	0.035*	0.001	-0.014	0.015*	-0.001	-0.015
	(0.024)	(0.019)	(0.020)	(0.034)	(0.022)	(0.017)	(0.016)	(0.027)	(0.008)	(0.007)	(0.005)	(0.016)
Age 55-59	0.007	0.010	-0.023	-0.019	-0.010	0.015	0.005	0.038	0.015	0.009	-0.013	-0.020
	(0.032)	(0.023)	(0.026)	(0.039)	(0.025)	(0.019)	(0.022)	(0.032)	(0.017)	(0.011)	(0.010)	(0.021)
Age 60+	0.006	0.024	0.019	-0.037	-0.018	-0.008	0.026	0.001	0.041*	0.035*	0.009	0.002
	(0.039)	(0.024)	(0.032)	(0.045)	(0.027)	(0.018)	(0.026)	(0.038)	(0.020)	(0.014)	(0.014)	(0.025)

	Leave school, any				Transfer				Leave MI ed			
	(1) 2018-19	(2) 2019-20	(3) 2020-21	(4) 2021-22	(5) 2018-19	(6) 2019-20	(7) 2020-21	(8) 2021-22	(9) 2018-19	(10) 2019-20	(11) 2020-21	(12) 2021-22
Teacher certification												
Interim or temporary certification	0.162 (0.115)	0.044 (0.057)	-0.009 (0.040)	0.064 (0.053)	0.067 (0.064)	-0.008 (0.039)	0.016 (0.036)	0.131** (0.049)	0.081 (0.072)	0.069 (0.046)	-0.013 (0.010)	-0.016 (0.025)
Legacy certification	-0.026 (0.036)	0.013 (0.038)	0.005 (0.041)	-0.114* (0.057)	-0.045* (0.022)	-0.029 (0.027)	-0.014 (0.025)	-0.062 (0.055)	0.005 (0.028)	0.028 (0.030)	0.012 (0.030)	-0.048* (0.020)
Standard certification	0.024 (0.028)	-0.006 (0.018)	0.017 (0.021)	-0.018 (0.028)	0.029 (0.023)	0.009 (0.016)	0.027 (0.019)	0.014 (0.024)	-0.029 (0.018)	-0.017* (0.007)	-0.013 (0.007)	0.005 (0.016)
Constant	0.138*** (0.019)	0.063*** (0.014)	0.058** (0.018)	0.144*** (0.027)	0.114*** (0.016)	0.059*** (0.012)	0.040** (0.015)	0.084*** (0.021)	0.012 (0.008)	-0.002 (0.006)	0.010 (0.006)	0.028* (0.014)
N	1832	2288	1928	1375	1832	2288	1928	1375	1832	2288	1928	1375
R^2	0.309	0.287	0.243	0.312	0.333	0.290	0.234	0.315	0.265	0.196	0.199	0.265
Adjusted R^2	0.180	0.189	0.129	0.176	0.209	0.192	0.118	0.180	0.128	0.085	0.078	0.121
Within R^2	0.049	0.048	0.056	0.089	0.028	0.024	0.047	0.064	0.108	0.092	0.050	0.085

Note: Regression coefficients from weighted linear probability models shown in Equation 1, but run separately for each year. Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. These are the full estimates associated with Table 2 of the main document. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix E. Findings: RQ3: Predictors of Intent and Actual Turnover Behavior

I. Predictors of Intent, Pooled Years

- **I-i. Tables including individual-level constructs**

Table E-1. Predictors of Intent to Leave School (Any Pathway Out)

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged	0.197**	0.187**	0.169**	0.072	0.164**
	(0.062)	(0.064)	(0.058)	(0.060)	(0.061)
English learner	-0.025	-0.025	-0.026	0.051	-0.010
	(0.101)	(0.099)	(0.095)	(0.094)	(0.091)
Special education	0.066	0.067	0.056	0.045	0.062
	(0.068)	(0.068)	(0.065)	(0.061)	(0.066)
Black	-0.029	-0.013	-0.019	-0.007	-0.000
	(0.051)	(0.051)	(0.048)	(0.048)	(0.048)
Hispanic or Latinx	-0.012	-0.015	-0.034	-0.050	-0.027
	(0.114)	(0.111)	(0.106)	(0.107)	(0.103)
Asian, Pacific Islander, 2+ races, Other	0.004	-0.009	-0.008	0.024	-0.034
	(0.158)	(0.156)	(0.146)	(0.134)	(0.134)
Enrollment (logged)	-0.003	-0.001	-0.008	-0.018*	-0.005
	(0.008)	(0.009)	(0.008)	(0.008)	(0.009)
Teacher characteristics					
Black		-0.015	0.001	0.012	0.008
		(0.015)	(0.015)	(0.015)	(0.015)
Hispanic or Latinx		0.043	0.060	0.053	0.058
		(0.038)	(0.036)	(0.034)	(0.037)
Asian, Pacific Islander, 2+ races, Other		-0.019	-0.025	-0.009	-0.013
		(0.029)	(0.028)	(0.028)	(0.028)
Male		-0.005	-0.005	-0.018	0.001
		(0.016)	(0.016)	(0.016)	(0.016)
Age <30		0.089***	0.095***	0.083**	0.081**
		(0.026)	(0.026)	(0.026)	(0.026)
Age 46-54		-0.018	-0.014	-0.006	-0.012
		(0.015)	(0.014)	(0.014)	(0.014)

	(1)	(2)	(3)	(4)	(5)
Age 55-59		0.010	0.018	0.020	0.012
		(0.018)	(0.017)	(0.017)	(0.017)
Age 60+		0.081**	0.097***	0.105***	0.099***
		(0.025)	(0.023)	(0.024)	(0.023)
Teacher certification					
Interim or temporary certification		0.044	0.032	0.043	0.053
		(0.040)	(0.038)	(0.037)	(0.037)
Legacy certification		-0.024	-0.021	-0.028	-0.029
		(0.034)	(0.033)	(0.035)	(0.033)
Standard certification		0.010	-0.002	0.005	0.007
		(0.016)	(0.015)	(0.016)	(0.016)
First-year teacher		-0.070*	-0.072*	-0.070*	-0.051
		(0.032)	(0.031)	(0.031)	(0.031)
1-3 years teaching experience		0.007	0.003	0.003	0.008
		(0.017)	(0.016)	(0.017)	(0.017)
School organizational conditions					
Improvement goal buy-in			-0.082***		
			(0.006)		
Positive school climate				-0.093***	
				(0.006)	
Effective school leadership					-0.089***
					(0.007)
Constant	0.001	-0.017	0.037	0.154*	-0.006
	(0.069)	(0.072)	(0.065)	(0.066)	(0.070)
N	6192	6192	6192	6192	6192
R^2	0.011	0.022	0.068	0.074	0.075
Adj R^2	0.009	0.018	0.064	0.071	0.071

Note: Estimates from weighted linear probability models predicting intent to leave school (any pathway out), shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects. These are the full estimates associated with Table 3, Column 1, of the main document, though Table 3 shows only a subset of the coefficient estimates. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-2. Predictors of Intent to Transfer

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged	0.184***	0.172***	0.161***	0.093*	0.155***
	(0.043)	(0.043)	(0.040)	(0.039)	(0.040)

	(1)	(2)	(3)	(4)	(5)
English learner	-0.024	-0.007	-0.007	0.045	0.005
	(0.081)	(0.076)	(0.074)	(0.072)	(0.066)
Special education	0.004	0.022	0.016	0.007	0.018
	(0.035)	(0.036)	(0.033)	(0.031)	(0.033)
Black	-0.073	-0.037	-0.041	-0.033	-0.028
	(0.045)	(0.045)	(0.043)	(0.041)	(0.042)
Hispanic or Latinx	-0.067	-0.071	-0.083	-0.095	-0.080
	(0.090)	(0.087)	(0.085)	(0.085)	(0.079)
Asian, Pacific Islander,	-0.096	-0.109	-0.109	-0.087	-0.128
2+ races, Other	(0.143)	(0.134)	(0.129)	(0.117)	(0.117)
Enrollment (logged)	-0.004	-0.003	-0.007	-0.015*	-0.006
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Teacher characteristics					
Black		-0.018	-0.008	0.000	-0.001
		(0.012)	(0.012)	(0.012)	(0.012)
Hispanic or Latinx		0.058	0.068*	0.065*	0.069*
		(0.034)	(0.033)	(0.032)	(0.033)
Asian, Pacific Islander,		-0.020	-0.023	-0.013	-0.015
2+ races, Other		(0.022)	(0.022)	(0.022)	(0.022)
Male		0.008	0.008	-0.002	0.012
		(0.013)	(0.013)	(0.013)	(0.013)
Age <30		0.063**	0.067**	0.059*	0.057*
		(0.024)	(0.024)	(0.024)	(0.024)
Age 46-54		-0.029*	-0.026*	-0.020	-0.025*
		(0.013)	(0.012)	(0.012)	(0.012)
Age 55-59		-0.046***	-0.040**	-0.038**	-0.044***
		(0.013)	(0.013)	(0.013)	(0.012)
Age 60+		-0.022	-0.012	-0.005	-0.009
		(0.020)	(0.019)	(0.020)	(0.019)
Teacher certification					
Interim or temporary		0.033	0.026	0.032	0.040
certification		(0.033)	(0.034)	(0.032)	(0.032)
Legacy certification		-0.049**	-0.048**	-0.052**	-0.054**
		(0.017)	(0.016)	(0.018)	(0.016)

	(1)	(2)	(3)	(4)	(5)
Standard certification		0.023	0.016	0.020	0.021
		(0.015)	(0.014)	(0.014)	(0.015)
First-year teacher		-0.057*	-0.058*	-0.057*	-0.043
		(0.027)	(0.027)	(0.026)	(0.027)
1-3 years teaching experience		0.006	0.003	0.003	0.007
		(0.014)	(0.014)	(0.014)	(0.014)
School organizational conditions					
Improvement goal buy-in			-0.050***		
			(0.005)		
Positive school climate				-0.063***	
				(0.005)	
Effective school leadership					-0.065***
					(0.006)
Constant	0.019	0.017	0.050	0.134*	0.025
	(0.053)	(0.053)	(0.050)	(0.052)	(0.050)
N	6192	6192	6192	6192	6192
R^2	0.009	0.025	0.051	0.062	0.068
Adj R^2	0.007	0.022	0.047	0.059	0.064

Note: Estimates from weighted linear probability models predicting intent to transfer, shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects and control for intent to leave school or retire so reference category is intent to stay in school. These are the full estimates associated with Table 3, Column 3, of the main document, though Table 3 shows only a subset of the coefficient estimates. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-3. Predictors of Intent to Leave Education or Retire

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged	0.014	0.015	0.008	-0.021	0.009
	(0.044)	(0.044)	(0.042)	(0.044)	(0.044)
English learner	-0.001	-0.019	-0.019	0.005	-0.015
	(0.054)	(0.052)	(0.051)	(0.051)	(0.053)
Special education	0.062	0.045	0.040	0.038	0.043
	(0.044)	(0.043)	(0.042)	(0.041)	(0.043)
Black	0.044	0.024	0.022	0.026	0.028
	(0.028)	(0.027)	(0.027)	(0.028)	(0.027)
Hispanic or Latinx	0.055	0.057	0.049	0.046	0.053
	(0.061)	(0.058)	(0.056)	(0.057)	(0.058)

	(1)	(2)	(3)	(4)	(5)
Asian, Pacific Islander, 2+ races, Other	0.100	0.101	0.101	0.111	0.094
	(0.073)	(0.071)	(0.069)	(0.071)	(0.070)
Enrollment (logged)	0.001	0.002	-0.001	-0.003	0.001
	(0.005)	(0.004)	(0.004)	(0.004)	(0.005)
Teacher characteristics					
Black		0.003	0.009	0.011	0.009
		(0.009)	(0.009)	(0.010)	(0.009)
Hispanic or Latinx		-0.015	-0.009	-0.012	-0.011
		(0.016)	(0.016)	(0.015)	(0.016)
Asian, Pacific Islander, 2+ races, Other		0.001	-0.001	0.004	0.002
		(0.020)	(0.020)	(0.020)	(0.020)
Male		-0.012	-0.012	-0.017	-0.011
		(0.009)	(0.009)	(0.009)	(0.009)
Age <30		0.026	0.029	0.024	0.024
		(0.015)	(0.015)	(0.015)	(0.015)
Age 46-54		0.011	0.012	0.014	0.012
		(0.008)	(0.008)	(0.008)	(0.008)
Age 55-59		0.055***	0.059***	0.059***	0.056***
		(0.014)	(0.014)	(0.014)	(0.014)
Age 60+		0.103***	0.109***	0.110***	0.107***
		(0.019)	(0.019)	(0.019)	(0.018)
Teacher certification					
Interim or temporary certification		0.011	0.006	0.011	0.013
		(0.030)	(0.028)	(0.029)	(0.029)
Legacy certification		0.026	0.027	0.024	0.024
		(0.029)	(0.029)	(0.029)	(0.029)
Standard certification		-0.013	-0.018*	-0.015	-0.014
		(0.008)	(0.008)	(0.008)	(0.008)
First-year teacher		-0.013	-0.014	-0.013	-0.008
		(0.019)	(0.018)	(0.019)	(0.019)
1-3 years teaching experience		0.001	-0.001	-0.000	0.001
		(0.010)	(0.010)	(0.010)	(0.011)
School organizational conditions					

	(1)	(2)	(3)	(4)	(5)
Improvement goal buy-in			-0.032***		
			(0.004)		
Positive school climate				-0.029***	
				(0.004)	
Effective school leadership					-0.024***
					(0.004)
Constant	-0.018	-0.034	-0.013	0.020	-0.031
	(0.041)	(0.042)	(0.039)	(0.040)	(0.043)
N	6192	6192	6192	6192	6192
R^2	0.005	0.026	0.042	0.038	0.035
Adj R^2	0.003	0.022	0.038	0.034	0.031

Note: Estimates from weighted linear probability models predicting intent to leave education or retire, shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects. These are the full estimates associated with Table 3, Column 5, of the main document, though Table 3 shows only a subset of the coefficient estimates. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

- **I-ii. Tables using peer (jackknife) constructs**

Table E-4. Predictors of Intent to Leave School (Any Pathway Out)

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged share	0.215***	0.204**	0.186**	0.135*	0.186**
	(0.063)	(0.065)	(0.061)	(0.060)	(0.063)
English learner share	-0.002	0.002	0.021	0.059	0.029
	(0.103)	(0.100)	(0.095)	(0.098)	(0.093)
Special education share	0.046	0.043	0.038	0.031	0.042
	(0.067)	(0.067)	(0.062)	(0.060)	(0.064)
Black share	-0.054	-0.042	-0.040	-0.029	-0.022
	(0.055)	(0.055)	(0.052)	(0.051)	(0.052)
Hispanic or Latinx share	-0.052	-0.063	-0.082	-0.087	-0.071
	(0.122)	(0.117)	(0.112)	(0.113)	(0.111)
Asian, Pacific Islander, 2+ races, Other share	0.001	-0.010	-0.017	0.001	-0.027
	(0.161)	(0.156)	(0.146)	(0.141)	(0.141)
Enrollment (logged)	0.001	0.003	-0.002	-0.008	-0.001
	(0.009)	(0.009)	(0.009)	(0.008)	(0.009)
Teacher characteristics					
Black		-0.015	-0.012	-0.008	-0.010
		(0.015)	(0.015)	(0.015)	(0.015)
Hispanic or Latinx		0.043	0.047	0.047	0.045
		(0.039)	(0.039)	(0.038)	(0.038)
Asian, Pacific Islander, 2+ races, Other		-0.018	-0.016	-0.013	-0.014
		(0.030)	(0.030)	(0.030)	(0.030)
Male		-0.006	-0.010	-0.010	-0.009
		(0.016)	(0.016)	(0.016)	(0.016)
Age <30		0.100***	0.100***	0.099***	0.098***
		(0.027)	(0.027)	(0.027)	(0.027)
Age 46-54		-0.011	-0.011	-0.009	-0.009
		(0.015)	(0.015)	(0.014)	(0.015)
Age 55-59		0.012	0.012	0.013	0.013
		(0.018)	(0.018)	(0.018)	(0.018)

	(1)	(2)	(3)	(4)	(5)
Age 60+		0.093***	0.094***	0.094***	0.098***
		(0.025)	(0.025)	(0.025)	(0.025)
Teacher certification					
Interim or temporary certification		0.056	0.056	0.057	0.058
		(0.042)	(0.042)	(0.042)	(0.042)
Legacy certification		-0.021	-0.021	-0.020	-0.023
		(0.035)	(0.035)	(0.035)	(0.035)
Standard certification		0.006	0.007	0.008	0.008
		(0.015)	(0.015)	(0.015)	(0.015)
First-year teacher		-0.070*	-0.067*	-0.067*	-0.063*
		(0.031)	(0.031)	(0.031)	(0.031)
1-3 years teaching experience		0.012	0.011	0.010	0.012
		(0.016)	(0.017)	(0.016)	(0.016)
School organizational conditions					
Improvement goal buy-in			-0.052***		
			(0.014)		
Positive school climate				-0.056***	
				(0.013)	
Effective school leadership					-0.051***
					(0.011)
Constant	-0.021	-0.037	-0.002	0.067	-0.021
	(0.074)	(0.076)	(0.071)	(0.068)	(0.074)
N	5990	5990	5990	5990	5990
R^2	0.011	0.024	0.028	0.030	0.030
Adj R^2	0.009	0.020	0.024	0.026	0.026

Note: Estimates from weighted linear probability models predicting intent to leave school (any pathway out), shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-5. Predictors of Intent to Transfer

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged share	0.202***	0.192***	0.180***	0.136***	0.175***
	(0.043)	(0.043)	(0.040)	(0.038)	(0.039)
English learner share	-0.007	0.017	0.029	0.063	0.040
	(0.081)	(0.077)	(0.074)	(0.075)	(0.068)

	(1)	(2)	(3)	(4)	(5)
Special education share	0.006	0.023	0.019	0.012	0.021
	(0.033)	(0.032)	(0.029)	(0.027)	(0.030)
Black share	-0.099*	-0.069	-0.067	-0.058	-0.051
	(0.049)	(0.048)	(0.047)	(0.045)	(0.045)
Hispanic or Latinx share	-0.103	-0.117	-0.129	-0.136	-0.124
	(0.097)	(0.093)	(0.091)	(0.090)	(0.085)
Asian, Pacific Islander, 2+ races, Other share	-0.118	-0.127	-0.131	-0.118	-0.142
	(0.146)	(0.135)	(0.129)	(0.121)	(0.120)
Enrollment (logged)	-0.000	0.001	-0.002	-0.008	-0.002
	(0.007)	(0.007)	(0.007)	(0.006)	(0.007)
Teacher characteristics					
Black		-0.015	-0.013	-0.010	-0.011
		(0.012)	(0.012)	(0.012)	(0.012)
Hispanic or Latinx		0.056	0.059	0.060	0.058
		(0.034)	(0.034)	(0.034)	(0.034)
Asian, Pacific Islander, 2+ races, Other		-0.021	-0.019	-0.017	-0.017
		(0.022)	(0.022)	(0.022)	(0.022)
Male		0.007	0.005	0.004	0.005
		(0.013)	(0.013)	(0.013)	(0.013)
Age <30		0.077**	0.078**	0.077**	0.076**
		(0.024)	(0.024)	(0.025)	(0.025)
Age 46-54		-0.026*	-0.026*	-0.025*	-0.025*
		(0.012)	(0.012)	(0.012)	(0.012)
Age 55-59		-0.045***	-0.044***	-0.043***	-0.043***
		(0.012)	(0.012)	(0.012)	(0.012)
Age 60+		-0.008	-0.008	-0.007	-0.004
		(0.020)	(0.020)	(0.020)	(0.020)
Teacher certification					
Interim or temporary certification		0.034	0.034	0.035	0.037
		(0.034)	(0.034)	(0.034)	(0.034)
Legacy certification		-0.042*	-0.042*	-0.041*	-0.044*
		(0.018)	(0.018)	(0.018)	(0.018)

	(1)	(2)	(3)	(4)	(5)
Standard certification		0.014	0.015	0.016	0.016
		(0.013)	(0.013)	(0.013)	(0.013)
First-year teacher		-0.060*	-0.058*	-0.057*	-0.054*
		(0.026)	(0.026)	(0.026)	(0.026)
1-3 years teaching experience		0.015	0.014	0.013	0.015
		(0.014)	(0.014)	(0.014)	(0.014)
School organizational conditions					
Improvement goal buy-in			-0.034**		
			(0.011)		
Positive school climate				-0.046***	
				(0.011)	
Effective school leadership					-0.045***
					(0.009)
Constant	0.000	-0.005	0.018	0.079	0.009
	(0.056)	(0.055)	(0.053)	(0.052)	(0.052)
N	5990	5990	5990	5990	5990
R^2	0.019	0.036	0.038	0.041	0.042
Adj R^2	0.017	0.032	0.034	0.037	0.038

Note: Estimates from weighted linear probability models predicting intent to transfer, shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects and an indicator for leaving Michigan public schools so estimates are relative to staying in the school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-6. Predictors of Intent to Leave or Retire

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged share	0.015	0.014	0.007	-0.001	0.011
	(0.046)	(0.046)	(0.045)	(0.046)	(0.046)
English learner share	0.005	-0.016	-0.009	-0.004	-0.013
	(0.059)	(0.056)	(0.054)	(0.055)	(0.056)
Special education share	0.045	0.023	0.021	0.021	0.023
	(0.048)	(0.047)	(0.046)	(0.046)	(0.047)
Black share	0.051	0.030	0.030	0.032	0.032
	(0.029)	(0.029)	(0.028)	(0.029)	(0.029)
Hispanic or Latinx share	0.058	0.060	0.053	0.055	0.059
	(0.066)	(0.061)	(0.060)	(0.061)	(0.062)
Asian, Pacific Islander, 2+ races, Other share	0.134	0.131	0.128	0.133	0.128
	(0.082)	(0.077)	(0.075)	(0.077)	(0.077)

	(1)	(2)	(3)	(4)	(5)
Enrollment (logged)	0.001	0.002	-0.000	-0.001	0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Teacher characteristics					
Black		0.000	0.002	0.002	0.001
		(0.010)	(0.009)	(0.010)	(0.010)
Hispanic or Latinx		-0.015	-0.013	-0.014	-0.014
		(0.017)	(0.017)	(0.017)	(0.017)
Asian, Pacific Islander, 2+ races, Other		0.003	0.004	0.004	0.004
		(0.021)	(0.021)	(0.021)	(0.021)
Male		-0.015	-0.016	-0.016	-0.015
		(0.009)	(0.009)	(0.009)	(0.009)
Age <30		0.025	0.025	0.025	0.025
		(0.014)	(0.015)	(0.015)	(0.014)
Age 46-54		0.017*	0.017*	0.017*	0.017*
		(0.008)	(0.008)	(0.008)	(0.008)
Age 55-59		0.063***	0.063***	0.064***	0.064***
		(0.014)	(0.014)	(0.014)	(0.014)
Age 60+		0.113***	0.114***	0.114***	0.114***
		(0.019)	(0.019)	(0.019)	(0.019)
Teacher certification					
Interim or temporary certification		0.024	0.024	0.025	0.025
		(0.032)	(0.033)	(0.032)	(0.032)
Legacy certification		0.024	0.024	0.024	0.023
		(0.030)	(0.030)	(0.030)	(0.030)
Standard certification		-0.009	-0.009	-0.009	-0.009
		(0.008)	(0.008)	(0.008)	(0.008)
First-year teacher		-0.011	-0.010	-0.010	-0.010
		(0.019)	(0.019)	(0.019)	(0.019)
1-3 years teaching experience		-0.003	-0.003	-0.004	-0.003
		(0.010)	(0.010)	(0.010)	(0.010)
School organizational conditions					
Improvement goal buy-in			-0.020*		
			(0.009)		

	(1)	(2)	(3)	(4)	(5)
Positive school climate				-0.012	
				(0.008)	
Effective school leadership					-0.007
					(0.007)
Constant	-0.024	-0.036	-0.022	-0.014	-0.034
	(0.047)	(0.047)	(0.045)	(0.046)	(0.047)
N	5990	5990	5990	5990	5990
R^2	0.005	0.029	0.030	0.030	0.029
Adj R^2	0.003	0.025	0.026	0.026	0.025

Note: Estimates from weighted linear probability models predicting intent to leave or retire, shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

II. Predictors of Actual Turnover Behavior, Pooled Years

- **II-i. Tables including individual-level constructs**

Table E-7. Predictors of Actually Leaving School (Any Pathway Out)

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged	0.127*	0.117*	0.111	0.079	0.110
	(0.058)	(0.057)	(0.057)	(0.059)	(0.057)
English learner	0.139	0.156	0.156	0.182	0.161
	(0.108)	(0.105)	(0.105)	(0.103)	(0.104)
Special education	-0.026	-0.012	-0.016	-0.019	-0.014
	(0.038)	(0.037)	(0.036)	(0.036)	(0.036)
Black	-0.124*	-0.096	-0.098	-0.094	-0.092
	(0.056)	(0.053)	(0.053)	(0.053)	(0.052)
Hispanic or Latinx	-0.228*	-0.234*	-0.240*	-0.246*	-0.238*
	(0.114)	(0.111)	(0.111)	(0.110)	(0.109)
Asian, Pacific Islander, 2+ races, Other	-0.274	-0.275	-0.275	-0.264	-0.283
	(0.167)	(0.162)	(0.163)	(0.159)	(0.158)
Enrollment (logged)	-0.020	-0.019	-0.021*	-0.024*	-0.020
	(0.010)	(0.010)	(0.011)	(0.011)	(0.010)
Teacher characteristics					
Black		-0.021	-0.016	-0.012	-0.014
		(0.014)	(0.013)	(0.014)	(0.013)
Hispanic or Latinx		0.025	0.031	0.028	0.030
		(0.035)	(0.034)	(0.034)	(0.034)
Asian, Pacific Islander, 2+ races, Other		-0.035	-0.037	-0.032	-0.033
		(0.021)	(0.021)	(0.021)	(0.021)
Male		0.007	0.007	0.003	0.009
		(0.013)	(0.013)	(0.013)	(0.013)
Age <30		0.026	0.028	0.024	0.023
		(0.030)	(0.029)	(0.030)	(0.030)
Age 46-54		-0.019	-0.017	-0.015	-0.017
		(0.013)	(0.013)	(0.013)	(0.013)
Age 55-59		-0.019	-0.016	-0.016	-0.018
		(0.015)	(0.015)	(0.015)	(0.015)

	(1)	(2)	(3)	(4)	(5)
Age 60+		-0.002	0.003	0.006	0.004
		(0.020)	(0.020)	(0.020)	(0.020)
Teacher certification					
Interim or temporary certification		0.052	0.048	0.052	0.055
		(0.038)	(0.037)	(0.038)	(0.038)
Legacy certification		-0.035	-0.034	-0.036	-0.037
		(0.023)	(0.023)	(0.023)	(0.023)
Standard certification		0.011	0.007	0.010	0.010
		(0.015)	(0.015)	(0.014)	(0.015)
First-year teacher		0.023	0.022	0.023	0.029
		(0.036)	(0.035)	(0.035)	(0.036)
1-3 years teaching experience		0.023	0.021	0.021	0.023
		(0.021)	(0.020)	(0.020)	(0.020)
School organizational conditions					
Improvement goal buy-in			-0.028***		
			(0.006)		
Positive school climate				-0.031***	
				(0.006)	
Effective school leadership					-0.028***
					(0.006)
Constant	0.285**	0.279**	0.297**	0.336***	0.282**
	(0.097)	(0.096)	(0.098)	(0.101)	(0.095)
N	6192	6192	6192	6192	6192
R^2	0.013	0.021	0.027	0.028	0.027
Adj R^2	0.011	0.017	0.024	0.024	0.023

Note: Estimates from weighted linear probability models predicting actually leaving school (any pathway out), shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects. These are the full estimates associated with Table 3, Column 2, of the main document, though Table 3 shows only a subset of the coefficient estimates. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-8. Predictors of Actual Transfer

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged	0.137**	0.121**	0.117**	0.097*	0.116**
	(0.045)	(0.043)	(0.043)	(0.045)	(0.043)
English learner	0.108	0.131	0.131	0.148	0.135
	(0.103)	(0.100)	(0.100)	(0.100)	(0.099)

	(1)	(2)	(3)	(4)	(5)
Special education	-0.034	-0.016	-0.018	-0.020	-0.017
	(0.035)	(0.034)	(0.034)	(0.034)	(0.033)
Black	-0.123*	-0.087	-0.089	-0.086	-0.084
	(0.053)	(0.051)	(0.051)	(0.050)	(0.050)
Hispanic or Latinx	-0.199	-0.200	-0.205	-0.208	-0.203
	(0.110)	(0.106)	(0.106)	(0.106)	(0.104)
Asian, Pacific Islander,	-0.322*	-0.331*	-0.331*	-0.324*	-0.338*
2+ races, Other	(0.153)	(0.147)	(0.147)	(0.145)	(0.143)
Enrollment (logged)	-0.021*	-0.020*	-0.022*	-0.024**	-0.021*
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Teacher characteristics					
Black		-0.028*	-0.024*	-0.022	-0.023
		(0.012)	(0.012)	(0.012)	(0.012)
Hispanic or Latinx		0.007	0.011	0.009	0.011
		(0.032)	(0.031)	(0.031)	(0.032)
Asian, Pacific Islander,		-0.030	-0.032	-0.028	-0.029
2+ races, Other		(0.018)	(0.018)	(0.018)	(0.018)
Male		0.004	0.004	0.001	0.005
		(0.011)	(0.011)	(0.011)	(0.011)
Age <30		0.024	0.025	0.022	0.022
		(0.028)	(0.028)	(0.028)	(0.028)
Age 46-54		-0.020	-0.019	-0.017	-0.019
		(0.011)	(0.011)	(0.011)	(0.011)
Age 55-59		-0.016	-0.014	-0.013	-0.015
		(0.013)	(0.013)	(0.013)	(0.013)
Age 60+		-0.029	-0.026	-0.024	-0.025
		(0.015)	(0.015)	(0.015)	(0.015)
Teacher certification					
Interim or temporary		0.081*	0.078*	0.081*	0.084*
certification		(0.036)	(0.036)	(0.036)	(0.036)
Legacy certification		-0.043**	-0.042**	-0.044**	-0.045**
		(0.016)	(0.016)	(0.016)	(0.016)
Standard certification		0.023	0.020	0.022	0.022
		(0.013)	(0.013)	(0.013)	(0.013)

	(1)	(2)	(3)	(4)	(5)
First-year teacher		0.003	0.002	0.003	0.008
		(0.029)	(0.029)	(0.029)	(0.029)
1-3 years teaching experience		0.005	0.004	0.004	0.005
		(0.018)	(0.018)	(0.018)	(0.018)
School organizational conditions					
Improvement goal buy-in			-0.020***		
			(0.005)		
Positive school climate				-0.020***	
				(0.005)	
Effective school leadership					-0.022***
					(0.005)
Constant	0.240**	0.239**	0.252**	0.276**	0.241**
	(0.086)	(0.084)	(0.086)	(0.087)	(0.084)
N	6192	6192	6192	6192	6192
R^2	0.011	0.024	0.029	0.029	0.030
Adj R^2	0.009	0.021	0.025	0.025	0.026

Note: Estimates from weighted linear probability models predicting actually transferring, shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects and controls for leaving Michigan education or moving to a non-teaching role outside of the school so that the reference category is staying in school. These are the full estimates associated with Table 3, Column 4, of the main document, though Table 3 shows only a subset of the coefficient estimates. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-9. Predictors of Actually Leaving Michigan Public Education

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged	-0.007	-0.008	-0.010	-0.020	-0.010
	(0.021)	(0.021)	(0.021)	(0.022)	(0.021)
English learner	0.009	0.012	0.012	0.019	0.013
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)
Special education	-0.001	-0.004	-0.005	-0.006	-0.004
	(0.010)	(0.010)	(0.010)	(0.011)	(0.010)
Black	0.004	0.006	0.006	0.007	0.007
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Hispanic or Latinx	0.006	-0.000	-0.002	-0.004	-0.001
	(0.044)	(0.043)	(0.043)	(0.043)	(0.044)
Asian, Pacific Islander, 2+ races, Other	0.017	0.019	0.019	0.022	0.017
	(0.049)	(0.050)	(0.051)	(0.051)	(0.051)

	(1)	(2)	(3)	(4)	(5)
Enrollment (logged)	0.003	0.004	0.003	0.002	0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Teacher characteristics					
Black		-0.007	-0.006	-0.004	-0.006
		(0.005)	(0.005)	(0.005)	(0.005)
Hispanic or Latinx		0.008	0.009	0.009	0.009
		(0.016)	(0.016)	(0.016)	(0.016)
Asian, Pacific Islander, 2+ races, Other		-0.016	-0.016	-0.015	-0.015
		(0.009)	(0.009)	(0.009)	(0.009)
Male		0.002	0.002	0.001	0.002
		(0.007)	(0.007)	(0.007)	(0.007)
Age <30		0.012	0.013	0.011	0.012
		(0.011)	(0.011)	(0.011)	(0.011)
Age 46-54		0.000	0.000	0.001	0.000
		(0.005)	(0.005)	(0.005)	(0.005)
Age 55-59		0.008	0.009	0.010	0.009
		(0.008)	(0.008)	(0.008)	(0.008)
Age 60+		0.037***	0.039***	0.040***	0.039***
		(0.011)	(0.011)	(0.011)	(0.011)
Teacher certification					
Interim or temporary certification		-0.006	-0.007	-0.006	-0.006
		(0.014)	(0.014)	(0.014)	(0.014)
Legacy certification		0.004	0.004	0.004	0.004
		(0.016)	(0.016)	(0.016)	(0.016)
Standard certification		-0.010	-0.011	-0.011	-0.010
		(0.007)	(0.007)	(0.007)	(0.007)
First-year teacher		0.008	0.008	0.008	0.010
		(0.015)	(0.015)	(0.015)	(0.015)
1-3 years teaching experience		0.012	0.012	0.012	0.013
		(0.008)	(0.008)	(0.008)	(0.008)
School organizational conditions					
Improvement goal buy-in			-0.008*		
			(0.003)		

	(1)	(2)	(3)	(4)	(5)
Positive school climate				-0.009***	
				(0.003)	
Effective school leadership					-0.006*
					(0.003)
Constant	0.004	-0.004	0.001	0.013	-0.004
	(0.022)	(0.023)	(0.023)	(0.023)	(0.023)
N	6192	6192	6192	6192	6192
R^2	0.004	0.012	0.015	0.016	0.014
Adj R^2	0.003	0.009	0.011	0.012	0.010

Note: Estimates from weighted linear probability models predicting actually leaving Michigan public education, shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects. These are the full estimates associated with Table 3, Column 6, of the main document, though Table 3 shows only a subset of the coefficient estimates. Standard errors, clustered at the school level, in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

- **II-ii. Tables including peer (jackknife) constructs**

Table E-10. Predictors of Actually Leaving School (Any Pathway Out)

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged	0.141**	0.137**	0.133**	0.092	0.129*
	(0.052)	(0.051)	(0.051)	(0.054)	(0.051)
English learner	0.172	0.188	0.193	0.225*	0.199
	(0.109)	(0.105)	(0.104)	(0.103)	(0.103)
Special education	0.003	0.016	0.015	0.008	0.016
	(0.035)	(0.035)	(0.034)	(0.033)	(0.033)
Black	-0.132*	-0.116*	-0.115*	-0.108*	-0.107*
	(0.055)	(0.053)	(0.053)	(0.052)	(0.052)
Hispanic or Latinx	-0.252*	-0.262*	-0.267*	-0.278*	-0.266*
	(0.111)	(0.109)	(0.109)	(0.108)	(0.108)
Asian, Pacific Islander, 2+ races, Other	-0.239	-0.231	-0.233	-0.224	-0.238
	(0.162)	(0.159)	(0.159)	(0.157)	(0.156)
Enrollment (logged)	-0.010	-0.009	-0.011	-0.016	-0.011
	(0.009)	(0.009)	(0.009)	(0.010)	(0.009)
Teacher characteristics					
Black		-0.009	-0.008	-0.004	-0.007
		(0.013)	(0.013)	(0.013)	(0.013)
Hispanic or Latinx		0.027	0.028	0.030	0.028
		(0.035)	(0.035)	(0.035)	(0.035)
Asian, Pacific Islander, 2+ races, Other		-0.027	-0.027	-0.024	-0.025
		(0.021)	(0.021)	(0.021)	(0.021)
Male		0.010	0.010	0.008	0.009
		(0.012)	(0.012)	(0.013)	(0.012)
Age <30		0.031	0.031	0.030	0.030
		(0.026)	(0.026)	(0.026)	(0.026)
Age 46-54		-0.019	-0.019	-0.018	-0.018
		(0.013)	(0.013)	(0.013)	(0.013)
Age 55-59		-0.016	-0.016	-0.015	-0.016
		(0.015)	(0.015)	(0.015)	(0.015)
Age 60+		-0.005	-0.005	-0.004	-0.003
		(0.020)	(0.020)	(0.020)	(0.020)

	(1)	(2)	(3)	(4)	(5)
Teacher certification					
Interim or temporary certification		0.041 (0.036)	0.042 (0.036)	0.042 (0.036)	0.043 (0.036)
Legacy certification		-0.031 (0.023)	-0.031 (0.023)	-0.030 (0.023)	-0.032 (0.023)
Standard certification		0.009 (0.014)	0.009 (0.014)	0.010 (0.014)	0.010 (0.014)
First-year teacher		0.025 (0.034)	0.026 (0.034)	0.027 (0.034)	0.028 (0.034)
1-3 years teaching experience		0.021 (0.019)	0.021 (0.019)	0.020 (0.019)	0.021 (0.019)
School organizational conditions					
Improvement goal buy-in			-0.013 (0.012)		
Positive school climate				-0.037** (0.011)	
Effective school leadership					-0.022* (0.011)
Constant	0.197* (0.084)	0.190* (0.084)	0.199* (0.085)	0.258** (0.093)	0.196* (0.084)
N	5990	5990	5990	5990	5990
R^2	0.012	0.018	0.018	0.021	0.019
Adj R^2	0.010	0.014	0.014	0.017	0.015

Note: Estimates from weighted linear probability models predicting actually leaving school (any pathway out) , shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-11. Predictors of Actual Transfer

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged	0.151***	0.143***	0.139***	0.099*	0.134***
	(0.041)	(0.039)	(0.039)	(0.041)	(0.039)
English learner	0.120	0.145	0.149	0.182	0.157
	(0.104)	(0.101)	(0.100)	(0.099)	(0.098)
Special education	-0.003	0.014	0.013	0.006	0.013
	(0.034)	(0.034)	(0.033)	(0.032)	(0.032)

	(1)	(2)	(3)	(4)	(5)
Black	-0.128*	-0.101*	-0.100*	-0.092	-0.092
	(0.052)	(0.051)	(0.050)	(0.049)	(0.049)
Hispanic or Latinx	-0.203	-0.212*	-0.216*	-0.227*	-0.215*
	(0.106)	(0.104)	(0.104)	(0.102)	(0.101)
Asian, Pacific Islander, 2+ races, Other	-0.287	-0.286*	-0.287*	-0.279*	-0.293*
	(0.149)	(0.144)	(0.144)	(0.140)	(0.140)
Enrollment (logged)	-0.012	-0.011	-0.012	-0.018*	-0.013
	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)
Teacher characteristics					
Black		-0.021	-0.021	-0.017	-0.019
		(0.011)	(0.011)	(0.011)	(0.011)
Hispanic or Latinx		0.007	0.008	0.010	0.008
		(0.031)	(0.031)	(0.031)	(0.031)
Asian, Pacific Islander, 2+ races, Other		-0.022	-0.021	-0.018	-0.020
		(0.018)	(0.018)	(0.018)	(0.018)
Male		0.009	0.008	0.007	0.008
		(0.010)	(0.011)	(0.011)	(0.011)
Age <30		0.025	0.025	0.024	0.024
		(0.024)	(0.024)	(0.024)	(0.024)
Age 46-54		-0.015	-0.015	-0.015	-0.015
		(0.011)	(0.011)	(0.011)	(0.011)
Age 55-59		-0.012	-0.012	-0.011	-0.011
		(0.013)	(0.013)	(0.013)	(0.013)
Age 60+		-0.020	-0.020	-0.019	-0.018
		(0.015)	(0.015)	(0.015)	(0.015)
Teacher certification					
Interim or temporary certification		0.064	0.064	0.065*	0.065*
		(0.033)	(0.033)	(0.033)	(0.033)
Legacy certification		-0.040*	-0.040*	-0.039*	-0.041*
		(0.016)	(0.016)	(0.016)	(0.016)
Standard certification		0.018	0.018	0.019	0.019
		(0.011)	(0.011)	(0.011)	(0.011)
First-year teacher		0.017	0.018	0.019	0.020
		(0.029)	(0.029)	(0.029)	(0.029)

	(1)	(2)	(3)	(4)	(5)
1-3 years teaching experience		0.008	0.007	0.006	0.008
		(0.015)	(0.015)	(0.015)	(0.015)
School organizational conditions					
Improvement goal buy-in			-0.011		
			(0.011)		
Positive school climate				-0.036***	
				(0.009)	
Effective school leadership					-0.023*
					(0.010)
Constant	0.158*	0.152*	0.159*	0.218**	0.159*
	(0.072)	(0.072)	(0.072)	(0.077)	(0.071)
N	5990	5990	5990	5990	5990
R^2	0.011	0.021	0.022	0.025	0.023
Adj R^2	0.009	0.017	0.017	0.021	0.019

Note: Estimates from weighted linear probability models predicting intent to transfer, shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects and an indicator for leaving Michigan public schools so estimates are relative to staying in the school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-12. Predictors of Actually Leaving Michigan Public Education

	(1)	(2)	(3)	(4)	(5)
Student demographics					
Economically disadvantaged	-0.010	-0.013	-0.014	-0.016	-0.012
	(0.021)	(0.021)	(0.021)	(0.022)	(0.021)
English learner	0.015	0.016	0.017	0.018	0.015
	(0.041)	(0.040)	(0.040)	(0.040)	(0.040)
Special education	0.002	-0.002	-0.002	-0.003	-0.002
	(0.011)	(0.012)	(0.011)	(0.011)	(0.012)
Black	0.008	0.009	0.009	0.009	0.008
	(0.019)	(0.018)	(0.018)	(0.018)	(0.019)
Hispanic or Latinx	0.006	0.001	0.000	0.000	0.001
	(0.047)	(0.046)	(0.046)	(0.046)	(0.046)
Asian, Pacific Islander, 2+ races, Other	0.040	0.041	0.040	0.041	0.041
	(0.053)	(0.054)	(0.055)	(0.054)	(0.054)
Enrollment (logged)	0.003	0.004	0.004	0.004	0.004
	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)
Teacher characteristics					
Black		-0.005	-0.005	-0.005	-0.005
		(0.005)	(0.006)	(0.006)	(0.006)

	(1)	(2)	(3)	(4)	(5)
Hispanic or Latinx		0.009	0.009	0.009	0.009
		(0.017)	(0.017)	(0.017)	(0.017)
Asian, Pacific Islander, 2+ races, Other		-0.015	-0.015	-0.015	-0.015
		(0.009)	(0.009)	(0.009)	(0.009)
Male		-0.002	-0.002	-0.002	-0.002
		(0.005)	(0.005)	(0.005)	(0.005)
Age <30		0.014	0.014	0.013	0.014
		(0.011)	(0.011)	(0.011)	(0.011)
Age 46-54		-0.002	-0.002	-0.002	-0.002
		(0.005)	(0.005)	(0.005)	(0.005)
Age 55-59		0.009	0.009	0.009	0.009
		(0.008)	(0.008)	(0.008)	(0.008)
Age 60+		-0.020	-0.020	-0.019	-0.018
		(0.015)	(0.015)	(0.015)	(0.015)
Teacher certification					
Interim or temporary certification		-0.003	-0.003	-0.003	-0.004
		(0.015)	(0.015)	(0.015)	(0.015)
Legacy certification		0.006	0.006	0.006	0.006
		(0.017)	(0.017)	(0.017)	(0.017)
Standard certification		-0.010	-0.009	-0.009	-0.010
		(0.007)	(0.007)	(0.007)	(0.007)
First-year teacher		0.009	0.009	0.009	0.008
		(0.015)	(0.015)	(0.015)	(0.015)
1-3 years teaching experience		0.015	0.015	0.015	0.015
		(0.009)	(0.009)	(0.009)	(0.009)
School organizational conditions					
Improvement goal buy-in			-0.003		
			(0.006)		
Positive school climate				-0.002	
				(0.005)	
Effective school leadership					0.001
					(0.004)
Constant	0.004	-0.002	-0.001	0.002	-0.003
	(0.025)	(0.026)	(0.027)	(0.028)	(0.026)

	(1)	(2)	(3)	(4)	(5)
N	5990	5990	5990	5990	5990
R^2	0.004	0.013	0.013	0.013	0.013
Adj R^2	0.003	0.009	0.009	0.009	0.009

Note: Estimates from weighted linear probability models predicting actually leaving Michigan public education, shown in Equation 2 (Cols 1-2) and 3 (Cols 3-5). All models include year fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

III. Predictors of Intent, by Year

- **III-i. Tables including individual-level constructs**

Table E-13. All Predictors of Intent to Leave School (Any Pathway Out), by Year

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Student demographics												
Economically disadvantaged	0.139	0.001	0.136	0.359***	0.249**	0.353***	0.077	0.039	0.089	0.174	0.053	0.151
	(0.102)	(0.100)	(0.102)	(0.087)	(0.084)	(0.086)	(0.090)	(0.092)	(0.085)	(0.102)	(0.108)	(0.113)
English learner	0.033	0.129	0.038	0.151	0.281	0.222	-0.064	-0.046	-0.050	-0.078	-0.021	-0.101
	(0.133)	(0.126)	(0.127)	(0.165)	(0.166)	(0.157)	(0.151)	(0.154)	(0.146)	(0.191)	(0.192)	(0.191)
Special education	-0.041	-0.048	-0.021	0.051	0.035	0.054	0.034	0.018	0.021	0.151	0.138	0.164
	(0.066)	(0.069)	(0.067)	(0.077)	(0.069)	(0.079)	(0.084)	(0.079)	(0.080)	(0.149)	(0.162)	(0.167)
Black	-0.074	-0.044	-0.057	-0.149	-0.140	-0.131	0.058	0.057	0.074	-0.046	-0.043	-0.046
	(0.097)	(0.095)	(0.095)	(0.087)	(0.085)	(0.085)	(0.070)	(0.069)	(0.069)	(0.106)	(0.103)	(0.109)
Hispanic or Latino/a/x	-0.138	-0.141	-0.108	-0.343	-0.391*	-0.377*	0.112	0.108	0.109	-0.026	-0.037	-0.017
	(0.182)	(0.173)	(0.174)	(0.186)	(0.187)	(0.178)	(0.171)	(0.172)	(0.167)	(0.223)	(0.223)	(0.225)
Asian, Pacific Islander, 2+ races, Other	-0.175	-0.107	-0.214	-0.475	-0.501	-0.501	0.518*	0.550*	0.529*	-0.250	-0.218	-0.320
	(0.224)	(0.220)	(0.219)	(0.265)	(0.265)	(0.261)	(0.214)	(0.219)	(0.216)	(0.331)	(0.305)	(0.322)
Enrollment (logged)	-0.003	-0.021	-0.000	-0.035**	-0.045***	-0.033*	-0.022	-0.023	-0.017	0.019	0.009	0.023
	(0.013)	(0.014)	(0.014)	(0.013)	(0.012)	(0.013)	(0.012)	(0.012)	(0.012)	(0.015)	(0.014)	(0.015)
Teacher characteristics												
Black	-0.016	0.017	0.001	0.024	0.024	0.021	0.016	0.016	0.023	-0.011	0.001	-0.007
	(0.027)	(0.028)	(0.028)	(0.026)	(0.026)	(0.027)	(0.022)	(0.022)	(0.022)	(0.032)	(0.033)	(0.031)
Hispanic or Latino/a/x	-0.015	-0.025	-0.036	0.078	0.067	0.083	0.048	0.035	0.049	0.091	0.102	0.097
	(0.056)	(0.054)	(0.053)	(0.072)	(0.069)	(0.077)	(0.052)	(0.053)	(0.056)	(0.068)	(0.066)	(0.067)

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Asian, Pacific Islander, 2+ races, Other	0.044 (0.064)	0.057 (0.064)	0.045 (0.063)	-0.020 (0.051)	-0.005 (0.049)	-0.029 (0.052)	-0.062 (0.040)	-0.043 (0.041)	-0.039 (0.041)	-0.041 (0.054)	-0.029 (0.057)	-0.011 (0.054)
Male	0.027 (0.027)	0.018 (0.026)	0.032 (0.027)	-0.009 (0.027)	-0.018 (0.027)	-0.006 (0.027)	-0.011 (0.024)	-0.023 (0.024)	-0.002 (0.024)	-0.012 (0.028)	-0.034 (0.029)	-0.008 (0.029)
Age <30	0.210* (0.084)	0.195* (0.083)	0.192* (0.082)	0.086 (0.049)	0.057 (0.049)	0.056 (0.050)	0.076* (0.038)	0.074 (0.038)	0.064 (0.037)	0.063 (0.049)	0.050 (0.049)	0.053 (0.048)
Age 46-54	-0.045 (0.028)	-0.029 (0.027)	-0.039 (0.026)	-0.028 (0.025)	-0.021 (0.026)	-0.018 (0.025)	0.017 (0.023)	0.020 (0.024)	0.009 (0.023)	-0.019 (0.031)	-0.012 (0.031)	-0.017 (0.031)
Age 55-59	0.005 (0.033)	0.011 (0.032)	-0.005 (0.032)	-0.019 (0.031)	-0.009 (0.031)	-0.020 (0.030)	0.076* (0.029)	0.072* (0.029)	0.068* (0.030)	-0.011 (0.040)	-0.011 (0.040)	-0.014 (0.037)
Age 60+	0.032 (0.044)	0.049 (0.044)	0.035 (0.043)	0.048 (0.036)	0.049 (0.036)	0.055 (0.036)	0.159*** (0.037)	0.168*** (0.040)	0.152*** (0.039)	0.104 (0.054)	0.110* (0.051)	0.111* (0.050)
Teacher certification												
Interim or temporary certification	0.157 (0.292)	0.157 (0.259)	0.225 (0.275)	0.050 (0.098)	0.045 (0.092)	0.095 (0.093)	0.027 (0.049)	0.022 (0.050)	0.032 (0.047)	0.039 (0.052)	0.072 (0.052)	0.064 (0.050)
Legacy certification	-0.001 (0.046)	-0.007 (0.045)	-0.011 (0.045)	-0.045 (0.054)	-0.044 (0.058)	-0.049 (0.055)	-0.003 (0.060)	-0.015 (0.061)	-0.003 (0.059)	-0.030 (0.080)	-0.033 (0.083)	-0.042 (0.080)
Standard certification	-0.039 (0.037)	-0.019 (0.037)	-0.031 (0.037)	-0.036 (0.028)	-0.025 (0.028)	-0.018 (0.028)	0.033 (0.026)	0.033 (0.026)	0.040 (0.026)	-0.005 (0.029)	0.004 (0.028)	0.003 (0.029)
First-year teacher	0.062 (0.331)	0.008 (0.318)	0.037 (0.338)	-0.184** (0.065)	-0.172** (0.065)	-0.174* (0.071)	0.019 (0.047)	0.008 (0.044)	0.029 (0.045)	-0.123* (0.049)	-0.113* (0.051)	-0.087 (0.049)
1-3 years teaching experience	0.049 (0.048)	0.034 (0.045)	0.056 (0.047)	0.045 (0.034)	0.046 (0.035)	0.052 (0.035)	-0.038 (0.026)	-0.036 (0.026)	-0.037 (0.027)	-0.012 (0.035)	-0.009 (0.036)	-0.006 (0.036)
School organizational conditions												

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Improvement goal buy-in	-0.045*** (0.011)			-0.101*** (0.011)			-0.087*** (0.010)			-0.088*** (0.011)		
Positive school climate		-0.083*** (0.012)			-0.091*** (0.011)			-0.084*** (0.011)			-0.107*** (0.013)	
Effective school leadership			-0.068*** (0.012)			-0.092*** (0.012)			-0.086*** (0.011)			-0.104*** (0.013)
Constant	0.115 (0.123)	0.286* (0.119)	0.069 (0.128)	0.263* (0.122)	0.402*** (0.117)	0.228 (0.122)	0.101 (0.104)	0.144 (0.109)	0.051 (0.101)	-0.026 (0.119)	0.136 (0.118)	-0.037 (0.125)
N	1253	1253	1253	1746	1746	1746	1864	1864	1864	1329	1329	1329
R^2	0.062	0.097	0.083	0.082	0.074	0.077	0.083	0.072	0.082	0.078	0.087	0.091
Adj R^2	0.046	0.081	0.068	0.071	0.063	0.066	0.073	0.061	0.071	0.063	0.072	0.076

Note: Estimates from weighted linear probability models predicting intent to leave school for any pathway out, shown in Equation 3, but with separate models for each year. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-14. All Predictors of Intent to Transfer, by Year

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Student demographics												
Economically disadvantaged	0.189* (0.074)	0.095 (0.075)	0.186* (0.073)	0.303*** (0.081)	0.218** (0.078)	0.297*** (0.077)	0.045 (0.074)	0.018 (0.074)	0.051 (0.069)	0.183** (0.069)	0.099 (0.064)	0.157* (0.069)
English learner	-0.068 (0.109)	-0.003 (0.108)	-0.064 (0.105)	0.033 (0.145)	0.129 (0.143)	0.083 (0.138)	0.056 (0.135)	0.068 (0.135)	0.065 (0.125)	-0.001 (0.128)	0.045 (0.128)	-0.003 (0.126)
Special education	-0.087 (0.049)	-0.090 (0.055)	-0.072 (0.052)	0.051 (0.055)	0.037 (0.052)	0.051 (0.058)	0.066 (0.070)	0.054 (0.067)	0.056 (0.066)	0.010 (0.056)	0.001 (0.055)	0.018 (0.057)
Black	-0.095 (0.088)	-0.073 (0.087)	-0.082 (0.087)	-0.101 (0.081)	-0.096 (0.079)	-0.088 (0.078)	-0.023 (0.061)	-0.023 (0.060)	-0.011 (0.059)	-0.006 (0.086)	-0.003 (0.079)	-0.004 (0.082)
Hispanic or Latino/a/x	-0.077 (0.153)	-0.076 (0.151)	-0.053 (0.149)	-0.203 (0.167)	-0.239 (0.165)	-0.228 (0.159)	-0.050 (0.150)	-0.052 (0.150)	-0.051 (0.141)	-0.092 (0.155)	-0.108 (0.151)	-0.100 (0.151)

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Asian, Pacific Islander, 2+ races, Other	-0.215	-0.169	-0.245	-0.154	-0.173	-0.173	0.013	0.034	0.019	-0.148	-0.128	-0.201
	(0.190)	(0.191)	(0.190)	(0.245)	(0.243)	(0.239)	(0.189)	(0.186)	(0.180)	(0.264)	(0.243)	(0.253)
Enrollment (logged)	-0.010	-0.021	-0.008	-0.015	-0.024*	-0.015	-0.016	-0.017	-0.012	0.009	0.002	0.011
	(0.011)	(0.012)	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Teacher characteristics												
Black	0.002	0.023	0.014	0.016	0.019	0.016	-0.002	-0.002	0.004	-0.027	-0.017	-0.021
	(0.023)	(0.023)	(0.024)	(0.022)	(0.022)	(0.022)	(0.018)	(0.018)	(0.018)	(0.028)	(0.028)	(0.026)
Hispanic or Latino/a/x	-0.015	-0.024	-0.032	0.110	0.103	0.115	0.056	0.048	0.058	0.087	0.096	0.095
	(0.045)	(0.046)	(0.044)	(0.067)	(0.063)	(0.070)	(0.048)	(0.048)	(0.050)	(0.062)	(0.061)	(0.059)
Asian, Pacific Islander, 2+ races, Other	0.055	0.064	0.056	0.006	0.017	-0.002	-0.054*	-0.042	-0.038	-0.070	-0.063	-0.050
	(0.055)	(0.056)	(0.055)	(0.048)	(0.047)	(0.049)	(0.027)	(0.026)	(0.027)	(0.036)	(0.034)	(0.036)
Male	0.008	0.002	0.012	0.004	-0.003	0.006	0.004	-0.005	0.010	0.016	0.002	0.020
	(0.022)	(0.021)	(0.021)	(0.023)	(0.023)	(0.023)	(0.020)	(0.020)	(0.020)	(0.021)	(0.022)	(0.022)
Age <30	0.192*	0.181*	0.178*	0.070	0.049	0.049	0.032	0.031	0.024	0.048	0.040	0.041
	(0.079)	(0.079)	(0.077)	(0.045)	(0.045)	(0.045)	(0.034)	(0.034)	(0.034)	(0.042)	(0.042)	(0.042)
Age 46-54	-0.054*	-0.043	-0.050*	-0.048*	-0.043	-0.041	-0.005	-0.003	-0.011	-0.011	-0.006	-0.008
	(0.024)	(0.023)	(0.023)	(0.023)	(0.023)	(0.022)	(0.021)	(0.021)	(0.021)	(0.028)	(0.027)	(0.028)
Age 55-59	-0.071**	-0.067**	-0.078***	-0.103***	-0.094***	-0.102***	-0.009	-0.011	-0.013	-0.003	-0.001	-0.002
	(0.022)	(0.022)	(0.022)	(0.023)	(0.023)	(0.021)	(0.023)	(0.023)	(0.023)	(0.034)	(0.034)	(0.032)
Age 60+	-0.070*	-0.060*	-0.068*	-0.037	-0.035	-0.031	0.019	0.026	0.016	0.013	0.018	0.020
	(0.031)	(0.030)	(0.029)	(0.028)	(0.028)	(0.027)	(0.031)	(0.033)	(0.032)	(0.040)	(0.038)	(0.038)
Teacher certification												

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Interim or temporary certification	0.102 (0.280)	0.105 (0.259)	0.154 (0.268)	0.021 (0.105)	0.014 (0.099)	0.052 (0.100)	0.029 (0.042)	0.025 (0.043)	0.031 (0.042)	0.033 (0.043)	0.053 (0.043)	0.049 (0.041)
Legacy certification	-0.026 (0.017)	-0.030 (0.019)	-0.033 (0.019)	-0.055 (0.032)	-0.055 (0.032)	-0.059 (0.032)	-0.048 (0.029)	-0.056 (0.031)	-0.047 (0.030)	-0.038 (0.053)	-0.039 (0.055)	-0.045 (0.050)
Standard certification	-0.025 (0.030)	-0.011 (0.029)	-0.019 (0.030)	-0.013 (0.026)	-0.005 (0.025)	0.001 (0.026)	0.030 (0.023)	0.029 (0.023)	0.033 (0.023)	0.036 (0.027)	0.039 (0.026)	0.038 (0.027)
First-year teacher	-0.275*** (0.081)	-0.313*** (0.083)	-0.295*** (0.080)	-0.130* (0.064)	-0.120 (0.064)	-0.122 (0.069)	0.040 (0.044)	0.033 (0.042)	0.047 (0.043)	-0.106** (0.039)	-0.101** (0.039)	-0.082* (0.038)
1-3 years teaching experience	0.038 (0.038)	0.029 (0.038)	0.044 (0.038)	0.018 (0.031)	0.019 (0.031)	0.023 (0.032)	-0.022 (0.020)	-0.020 (0.021)	-0.022 (0.021)	0.000 (0.032)	0.002 (0.031)	0.004 (0.032)
School organizational conditions												
Improvement goal buy-in	-0.036*** (0.009)			-0.069*** (0.010)			-0.055*** (0.009)			-0.044*** (0.010)		
Positive school climate		-0.056*** (0.010)			-0.069*** (0.011)			-0.056*** (0.010)			-0.069*** (0.010)	
Effective school leadership			-0.051*** (0.011)			-0.068*** (0.011)			-0.061*** (0.010)			-0.076*** (0.011)
Constant	0.120 (0.098)	0.231* (0.107)	0.084 (0.096)	0.090 (0.100)	0.203* (0.103)	0.070 (0.100)	0.149 (0.096)	0.182 (0.097)	0.121 (0.092)	-0.071 (0.101)	0.040 (0.096)	-0.067 (0.098)
N	1253	1253	1253	1746	1746	1746	1864	1864	1864	1329	1329	1329
R^2	0.090	0.110	0.107	0.068	0.070	0.071	0.052	0.049	0.061	0.048	0.067	0.083
Adj R^2	0.075	0.094	0.091	0.057	0.059	0.060	0.041	0.038	0.050	0.033	0.052	0.068

Note: Estimates from weighted linear probability models predicting intent to transfer, shown in Equation 3, but with separate models for each year. All models include controls for intent to leave education or retire so that reference category is intent to stay in school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-15. All Predictors of Intent to Leave Education or Retire, by Year

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	2018-19			2019-20			2020-21			2021-22		
Student demographics												
Economically disadvantaged	-0.050	-0.093	-0.050	0.056	0.032	0.056	0.033	0.021	0.038	-0.009	-0.047	-0.006
	(0.078)	(0.080)	(0.078)	(0.053)	(0.053)	(0.055)	(0.064)	(0.064)	(0.064)	(0.081)	(0.087)	(0.085)
English learner	0.101	0.132*	0.102	0.118	0.152	0.138	-0.120	-0.114	-0.115	-0.078	-0.066	-0.099
	(0.066)	(0.062)	(0.066)	(0.104)	(0.105)	(0.104)	(0.091)	(0.093)	(0.095)	(0.116)	(0.115)	(0.116)
Special education	0.046	0.043	0.051	0.000	-0.002	0.002	-0.032	-0.037	-0.035	0.141	0.137	0.146
	(0.046)	(0.045)	(0.045)	(0.049)	(0.048)	(0.049)	(0.030)	(0.030)	(0.031)	(0.129)	(0.137)	(0.138)
Black	0.022	0.028	0.025	-0.048	-0.045	-0.042	0.081*	0.080*	0.085*	-0.040	-0.040	-0.042
	(0.052)	(0.052)	(0.051)	(0.047)	(0.046)	(0.047)	(0.038)	(0.039)	(0.039)	(0.065)	(0.067)	(0.066)
Hispanic or Latino/a/x	-0.061	-0.065	-0.054	-0.140	-0.152	-0.149	0.161	0.160	0.161	0.066	0.071	0.083
	(0.098)	(0.094)	(0.096)	(0.107)	(0.109)	(0.108)	(0.088)	(0.090)	(0.092)	(0.138)	(0.138)	(0.139)
Asian, Pacific Islander, 2+ races, Other	0.041	0.062	0.030	-0.321**	-0.328**	-0.328**	0.505***	0.516***	0.509***	-0.102	-0.090	-0.120
	(0.131)	(0.130)	(0.129)	(0.106)	(0.106)	(0.107)	(0.135)	(0.141)	(0.142)	(0.187)	(0.185)	(0.186)
Enrollment (logged)	0.007	0.001	0.007	-0.019*	-0.021*	-0.018*	-0.006	-0.006	-0.004	0.011	0.008	0.013
	(0.011)	(0.010)	(0.011)	(0.008)	(0.008)	(0.009)	(0.006)	(0.006)	(0.006)	(0.009)	(0.008)	(0.009)
Teacher characteristics												
Black	-0.018	-0.006	-0.013	0.008	0.006	0.005	0.018	0.018	0.020	0.016	0.019	0.014
	(0.016)	(0.018)	(0.017)	(0.017)	(0.017)	(0.017)	(0.014)	(0.014)	(0.014)	(0.018)	(0.018)	(0.018)
Hispanic or Latino/a/x	0.000	-0.001	-0.004	-0.032	-0.036	-0.032	-0.008	-0.013	-0.010	0.004	0.006	0.002
	(0.043)	(0.042)	(0.043)	(0.025)	(0.026)	(0.026)	(0.023)	(0.023)	(0.023)	(0.042)	(0.042)	(0.042)
Asian, Pacific Islander, 2+ races, Other	-0.011	-0.007	-0.011	-0.026	-0.021	-0.027	-0.008	-0.001	-0.000	0.029	0.034	0.038
	(0.033)	(0.033)	(0.033)	(0.021)	(0.021)	(0.022)	(0.033)	(0.034)	(0.034)	(0.048)	(0.051)	(0.050)
Male	0.019	0.016	0.020	-0.013	-0.015	-0.012	-0.014	-0.019	-0.012	-0.028	-0.037	-0.028
	(0.020)	(0.020)	(0.020)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.019)	(0.020)	(0.020)

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Age <30	0.018	0.013	0.013	0.016	0.007	0.007	0.044	0.043	0.040	0.015	0.011	0.012
	(0.031)	(0.030)	(0.031)	(0.025)	(0.024)	(0.024)	(0.023)	(0.023)	(0.023)	(0.033)	(0.033)	(0.033)
Age 46-54	0.009	0.014	0.010	0.020	0.021	0.022	0.022	0.023	0.019	-0.008	-0.006	-0.008
	(0.012)	(0.013)	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.013)	(0.013)	(0.020)	(0.021)	(0.021)
Age 55-59	0.076**	0.078**	0.073**	0.083***	0.085***	0.083**	0.084***	0.082***	0.081***	-0.008	-0.010	-0.012
	(0.025)	(0.024)	(0.024)	(0.025)	(0.025)	(0.025)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Age 60+	0.102**	0.109**	0.103**	0.085**	0.084**	0.086**	0.140***	0.142***	0.136***	0.091*	0.092*	0.091*
	(0.033)	(0.034)	(0.033)	(0.030)	(0.030)	(0.030)	(0.030)	(0.031)	(0.031)	(0.040)	(0.040)	(0.040)
Teacher certification												
Interim or temporary certification	0.055	0.052	0.071	0.029	0.031	0.044	-0.001	-0.003	0.000	0.006	0.019	0.015
	(0.105)	(0.101)	(0.104)	(0.056)	(0.057)	(0.057)	(0.026)	(0.026)	(0.025)	(0.040)	(0.041)	(0.041)
Legacy certification	0.025	0.023	0.023	0.010	0.011	0.010	0.044	0.040	0.045	0.008	0.006	0.003
	(0.045)	(0.045)	(0.044)	(0.055)	(0.057)	(0.056)	(0.056)	(0.056)	(0.056)	(0.064)	(0.064)	(0.064)
Standard certification	-0.014	-0.008	-0.012	-0.023	-0.020	-0.018	0.003	0.004	0.006	-0.040*	-0.035	-0.035
	(0.017)	(0.017)	(0.017)	(0.015)	(0.016)	(0.016)	(0.014)	(0.014)	(0.014)	(0.019)	(0.019)	(0.019)
First-year teacher	0.337	0.322	0.331	-0.054**	-0.052**	-0.052**	-0.021	-0.025	-0.019	-0.018	-0.012	-0.005
	(0.329)	(0.324)	(0.330)	(0.017)	(0.017)	(0.017)	(0.022)	(0.022)	(0.022)	(0.032)	(0.034)	(0.034)
1-3 years teaching experience	0.010	0.005	0.012	0.027	0.027	0.029	-0.016	-0.015	-0.016	-0.013	-0.011	-0.010
	(0.032)	(0.030)	(0.032)	(0.023)	(0.023)	(0.022)	(0.016)	(0.016)	(0.016)	(0.022)	(0.023)	(0.022)
School organizational conditions												
Improvement goal buy-in	-0.010			-0.033***			-0.033***			-0.044***		
	(0.006)			(0.008)			(0.007)			(0.009)		
Positive school climate		-0.028**			-0.022***			-0.028***			-0.038***	
		(0.008)			(0.006)			(0.007)			(0.009)	

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	2018-19			2019-20			2020-21			2021-22		
Effective school leadership			-0.017**			-0.024***			-0.025***			-0.028**
			(0.006)			(0.007)			(0.007)			(0.009)
Constant	-0.005	0.055	-0.016	0.173*	0.199*	0.158	-0.049	-0.038	-0.070	0.045	0.095	0.030
	(0.111)	(0.108)	(0.112)	(0.079)	(0.078)	(0.080)	(0.051)	(0.054)	(0.053)	(0.064)	(0.069)	(0.068)
N	1253	1253	1253	1746	1746	1746	1864	1864	1864	1329	1329	1329
R^2	0.043	0.055	0.047	0.045	0.038	0.039	0.068	0.061	0.061	0.054	0.044	0.037
Adj R^2	0.027	0.039	0.031	0.033	0.026	0.027	0.057	0.050	0.050	0.039	0.028	0.022

Note: Estimates from weighted linear probability models predicting intent to leave education or retire, shown in Equation 3, but with separate models for each year.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-16. School Organizational Conditions Predictors of Intent Only, by Year (individual-level constructs)

	2018-19			2019-20			2020-21			2021-22		
	(1) Leave school, any	(2) Transfer	(3) Leave MI ed / retire	(4) Leave school, any	(5) Transfer	(6) Leave MI ed / retire	(7) Leave school, any	(8) Transfer	(9) Leave MI ed / retire	(10) Leave school, any	(11) Transfer	(12) Leave MI ed / retire
Improvement goal buy-in	-0.045***	-0.036***	-0.010	-0.101***	-0.069***	-0.033***	-0.087***	-0.055***	-0.033***	-0.088***	-0.044***	-0.044***
	(0.011)	(0.009)	(0.006)	(0.011)	(0.010)	(0.008)	(0.010)	(0.009)	(0.007)	(0.011)	(0.010)	(0.009)
Positive school climate	-0.083***	-0.056***	-0.028**	-0.091***	-0.069***	-0.022***	-0.084***	-0.056***	-0.028***	-0.107***	-0.069***	-0.038***
	(0.012)	(0.010)	(0.008)	(0.011)	(0.011)	(0.006)	(0.011)	(0.010)	(0.007)	(0.013)	(0.010)	(0.009)
Effective school leadership	-0.068***	-0.051***	-0.017**	-0.092***	-0.068***	-0.024***	-0.086***	-0.061***	-0.025***	-0.104***	-0.076***	-0.028**
	(0.012)	(0.011)	(0.006)	(0.012)	(0.011)	(0.007)	(0.011)	(0.010)	(0.007)	(0.013)	(0.011)	(0.009)
Safe school & positive student behavior	-0.086***	-0.058***	-0.027**	-0.103***	-0.071***	-0.032***	[a]	[a]	[a]	-0.123***	-0.084***	-0.038***
	(0.013)	(0.011)	(0.010)	(0.012)	(0.011)	(0.007)				(0.014)	(0.012)	(0.009)
Human resources hindrances	[a]	[a]	[a]	[a]	[a]	[a]	0.046***	0.024*	0.022**	0.062***	0.037***	0.025**
							(0.011)	(0.009)	(0.007)	(0.013)	(0.010)	(0.009)
Adequate teacher resources and capacity	[a]	[a]	[a]	[a]	[a]	[a]	-0.039***	-0.024*	-0.014*	-0.074***	-0.043***	-0.031**
							(0.011)	(0.009)	(0.006)	(0.011)	(0.008)	(0.010)
Student pandemic challenges	[a]	[a]	[a]	[a]	[a]	[a]	0.030*	0.015	0.014*	0.040*	0.017	0.023*
							(0.012)	(0.011)	(0.007)	(0.017)	(0.013)	(0.012)
N	1,219–1,253			1,730–1,746			1,009–1,864			753–1,329		

[a] Construct data not collected for given year

Note: Estimates from separate weighted linear probability models with a full set of school and teacher covariates, and year fixed effects (shown in Equation 3). Constructs included one at a time, so each cell provides an estimate from a separate model. Ns are slightly different by year because we include all teachers for whom we have construct data for a given construct. Range is largest for 2020-21 and 2021-22 because the student pandemic challenges construct has substantially more missingness than the others. This is because teachers were more likely to select "I don't know" in response to one or more of the questions asking about their students' challenges. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

- **III-ii. Tables using peer (jackknife) constructs**

Table E-17. School Organizational Conditions Predictors of Intent, by Year (peer/jackknife constructs)

	2018-19			2019-20			2020-21			2021-22		
	(1) Leave school, any	(2) Transfer	(3) Leave MI ed/retire	(4) Leave school, any	(5) Transfer	(6) Leave MI ed/retire	(7) Leave school, any	(8) Transfer	(9) Leave MI ed/retire	(10) Leave school, any	(11) Transfer	(12) Leave MI ed/retire
Improvement goal buy-in	-0.075***	-0.047**	-0.031*	-0.043	-0.037	-0.006	-0.017	-0.005	-0.013	-0.059*	-0.041*	-0.021
	(0.021)	(0.017)	(0.014)	(0.027)	(0.024)	(0.015)	(0.025)	(0.020)	(0.013)	(0.026)	(0.020)	(0.021)
Positive school climate	-0.051**	-0.029*	-0.023*	-0.057*	-0.047*	-0.012	-0.042*	-0.034+	-0.009	-0.059*	-0.059*	-0.000
	(0.019)	(0.015)	(0.012)	(0.022)	(0.020)	(0.012)	(0.021)	(0.018)	(0.013)	(0.030)	(0.024)	(0.019)
Effective school leadership	-0.057***	-0.039**	-0.019+	-0.061**	-0.055**	-0.007	-0.022	-0.019	-0.003	-0.059*	-0.063***	0.004
	(0.017)	(0.013)	(0.010)	(0.019)	(0.018)	(0.010)	(0.020)	(0.016)	(0.012)	(0.024)	(0.019)	(0.016)
Safe school & positive student behavior	-0.048**	-0.032*	-0.016	-0.053**	-0.053**	-0.000	.	.	.	-0.063**	-0.064**	0.001
	(0.018)	(0.015)	(0.012)	(0.019)	(0.018)	(0.010)	.	.	.	(0.023)	(0.020)	(0.013)
Human resources hindrances	.	.	.	.	.	.	0.016	0.007	0.010	0.062*	0.059*	0.003
	.	.	.	.	.	.	(0.029)	(0.024)	(0.015)	(0.027)	(0.023)	(0.015)
Adequate teacher resources and capacity	.	.	.	.	.	.	0.012	0.011	0.000	-0.026	0.007	-0.039
	.	.	.	.	.	.	(0.025)	(0.017)	(0.020)	(0.030)	(0.020)	(0.026)
Student pandemic challenges	.	.	.	.	.	.	-0.053*	-0.041*	-0.013	-0.018	-0.034	0.018
	.	.	.	.	.	.	(0.026)	(0.021)	(0.016)	(0.030)	(0.021)	(0.020)
	N=1,153–1,185			*N*=1,679–1,695			*N*=894–1,821			*N*=669–1,289		

[a] Construct data not collected for given year

Note: Estimates from separate weighted linear probability models with a full set of school and teacher covariates, and year fixed effects (shown in Equation 3). Constructs included one at a time, so each cell provides an estimate from a separate model. Ns are slightly different by year because we include all teachers for whom we have construct data for a given construct. Range is largest for 2020-21 and 2021-22 because the student pandemic challenges construct has substantially more missingness than the others. This is because teachers were more likely to select "I don't know" in response to one or more of the questions asking about their students' challenges. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

IV. Predictors of Actual Turnover Behavior, by Year

- **IV-I. Tables using individual-level constructs**

Table E-18. Predictors of Actually Leaving School (Any Pathway Out), by Year

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Student demographics												
Economically disadvantaged	0.094 (0.122)	0.081 (0.122)	0.090 (0.121)	0.074 (0.095)	0.032 (0.094)	0.073 (0.093)	0.087 (0.082)	0.075 (0.085)	0.091 (0.080)	0.150 (0.110)	0.089 (0.114)	0.138 (0.114)
English learner	-0.046 (0.195)	-0.036 (0.194)	-0.043 (0.196)	0.181 (0.173)	0.221 (0.170)	0.195 (0.171)	0.331* (0.154)	0.338* (0.154)	0.336* (0.152)	0.150 (0.188)	0.182 (0.190)	0.142 (0.191)
Special education	-0.044 (0.058)	-0.042 (0.058)	-0.040 (0.058)	0.013 (0.059)	0.004 (0.061)	0.013 (0.058)	0.043 (0.067)	0.038 (0.068)	0.037 (0.067)	-0.057 (0.074)	-0.064 (0.074)	-0.052 (0.074)
Black	-0.002 (0.108)	0.007 (0.109)	0.006 (0.109)	-0.233* (0.105)	-0.232* (0.105)	-0.229* (0.104)	-0.102 (0.085)	-0.103 (0.084)	-0.095 (0.084)	-0.070 (0.126)	-0.068 (0.122)	-0.070 (0.127)
Hispanic or Latino/a/x	0.084 (0.186)	0.089 (0.188)	0.091 (0.189)	-0.359 (0.216)	-0.375 (0.215)	-0.366 (0.213)	-0.391* (0.182)	-0.392* (0.181)	-0.392* (0.180)	-0.247 (0.234)	-0.257 (0.236)	-0.246 (0.240)
Asian, Pacific Islander, 2+ races, Other	-0.111 (0.269)	-0.104 (0.269)	-0.110 (0.268)	-0.449 (0.295)	-0.456 (0.293)	-0.454 (0.291)	-0.141 (0.256)	-0.130 (0.252)	-0.137 (0.250)	-0.400 (0.354)	-0.385 (0.345)	-0.432 (0.353)
Enrollment (logged)	-0.012 (0.016)	-0.013 (0.016)	-0.011 (0.016)	-0.016 (0.014)	-0.021 (0.014)	-0.015 (0.014)	-0.029* (0.014)	-0.029* (0.014)	-0.027* (0.013)	-0.025 (0.025)	-0.030 (0.025)	-0.024 (0.025)
Teacher characteristics												
Black	-0.002 (0.031)	-0.002 (0.032)	-0.005 (0.031)	-0.014 (0.019)	-0.009 (0.019)	-0.014 (0.019)	-0.006 (0.021)	-0.007 (0.021)	-0.003 (0.020)	-0.030 (0.029)	-0.023 (0.029)	-0.027 (0.030)
Hispanic or Latino/a/x	0.063 (0.125)	0.059 (0.125)	0.059 (0.126)	-0.027 (0.049)	-0.029 (0.049)	-0.026 (0.049)	-0.033 (0.045)	-0.039 (0.045)	-0.032 (0.045)	0.081 (0.063)	0.087 (0.063)	0.084 (0.062)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	2018-19			2019-20			2020-21			2021-22		
Asian, Pacific Islander, 2+ races, Other	0.001	0.001	0.000	-0.018	-0.014	-0.020	-0.026	-0.019	-0.016	-0.097*	-0.092*	-0.084*
	(0.056)	(0.056)	(0.055)	(0.036)	(0.037)	(0.037)	(0.040)	(0.040)	(0.039)	(0.042)	(0.044)	(0.042)
Male	-0.018	-0.018	-0.017	0.010	0.006	0.011	0.016	0.011	0.019	0.010	-0.001	0.012
	(0.025)	(0.025)	(0.025)	(0.021)	(0.021)	(0.021)	(0.023)	(0.024)	(0.023)	(0.030)	(0.030)	(0.030)
Age <30	0.039	0.037	0.038	0.024	0.017	0.018	0.032	0.030	0.027	-0.008	-0.014	-0.012
	(0.072)	(0.072)	(0.072)	(0.044)	(0.044)	(0.044)	(0.045)	(0.044)	(0.044)	(0.048)	(0.048)	(0.048)
Age 46-54	-0.058*	-0.057*	-0.058*	0.023	0.026	0.025	0.007	0.007	0.003	-0.048	-0.044	-0.046
	(0.028)	(0.028)	(0.028)	(0.021)	(0.021)	(0.021)	(0.022)	(0.022)	(0.022)	(0.034)	(0.034)	(0.034)
Age 55-59	-0.001	-0.000	-0.001	0.024	0.028	0.024	-0.017	-0.019	-0.020	-0.058	-0.057	-0.059
	(0.037)	(0.037)	(0.037)	(0.027)	(0.027)	(0.027)	(0.025)	(0.025)	(0.025)	(0.037)	(0.037)	(0.036)
Age 60+	0.021	0.019	0.017	0.038	0.040	0.039	0.016	0.018	0.014	-0.061	-0.057	-0.057
	(0.048)	(0.048)	(0.048)	(0.027)	(0.027)	(0.028)	(0.031)	(0.031)	(0.031)	(0.045)	(0.045)	(0.045)
Teacher certification												
Interim or temporary certification	0.611***	0.617***	0.619***	-0.032	-0.040	-0.023	-0.077	-0.078	-0.075	0.084	0.099	0.094
	(0.159)	(0.159)	(0.159)	(0.064)	(0.066)	(0.065)	(0.045)	(0.046)	(0.044)	(0.064)	(0.066)	(0.066)
Legacy certification	-0.044	-0.045	-0.045	-0.016	-0.017	-0.017	-0.025	-0.029	-0.025	-0.071	-0.072	-0.077
	(0.045)	(0.044)	(0.044)	(0.041)	(0.041)	(0.041)	(0.040)	(0.041)	(0.039)	(0.059)	(0.060)	(0.060)
Standard certification	0.017	0.020	0.018	-0.006	-0.004	-0.003	0.009	0.010	0.011	0.005	0.009	0.008
	(0.040)	(0.041)	(0.041)	(0.023)	(0.023)	(0.023)	(0.025)	(0.025)	(0.025)	(0.030)	(0.030)	(0.030)
First-year teacher	-0.231**	-0.240**	-0.237**	-0.006	-0.000	-0.004	0.113*	0.108*	0.117*	-0.031	-0.027	-0.015
	(0.076)	(0.076)	(0.076)	(0.068)	(0.069)	(0.068)	(0.054)	(0.054)	(0.054)	(0.058)	(0.059)	(0.058)
1-3 years teaching experience	-0.025	-0.025	-0.023	0.053	0.053	0.055	0.069	0.070	0.069	-0.020	-0.019	-0.018
	(0.051)	(0.051)	(0.052)	(0.037)	(0.037)	(0.038)	(0.040)	(0.040)	(0.040)	(0.039)	(0.039)	(0.039)
School organizational conditions												

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Improvement goal buy-in	-0.014 (0.012)			-0.020* (0.008)			-0.035*** (0.010)			-0.036** (0.012)		
Positive school climate		-0.006 (0.011)			-0.031*** (0.009)			-0.028** (0.011)			-0.051*** (0.012)	
Effective school leadership			-0.001 (0.011)			-0.018* (0.008)			-0.038*** (0.011)			-0.048*** (0.013)
Constant	0.170 (0.122)	0.177 (0.123)	0.161 (0.124)	0.321* (0.139)	0.383** (0.142)	0.315* (0.137)	0.298* (0.134)	0.308* (0.138)	0.280* (0.130)	0.339 (0.188)	0.420* (0.194)	0.336 (0.189)
N	1253	1253	1253	1746	1746	1746	1864	1864	1864	1329	1329	1329
R^2	0.052	0.051	0.051	0.023	0.029	0.023	0.041	0.037	0.044	0.033	0.039	0.038
Adj R^2	0.036	0.035	0.035	0.011	0.017	0.011	0.030	0.026	0.033	0.017	0.024	0.023

Note: Estimates from weighted linear probability models predicting actually leaving school for any pathway out, shown in Equation 3, but with separate models for each year. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-19. Predictors of Transfer, by Year

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Student demographics												
Economically disadvantaged	0.093 (0.097)	0.082 (0.098)	0.088 (0.098)	0.143 (0.082)	0.112 (0.080)	0.142 (0.080)	0.035 (0.065)	0.028 (0.067)	0.036 (0.064)	0.194** (0.072)	0.155* (0.075)	0.185* (0.074)
English learner	-0.067 (0.187)	-0.058 (0.188)	-0.062 (0.188)	0.117 (0.144)	0.147 (0.141)	0.127 (0.142)	0.275 (0.151)	0.279 (0.150)	0.278 (0.148)	0.129 (0.161)	0.150 (0.162)	0.125 (0.160)
Special education	-0.073 (0.040)	-0.068 (0.041)	-0.066 (0.041)	0.047 (0.058)	0.040 (0.059)	0.047 (0.057)	0.050 (0.053)	0.047 (0.054)	0.044 (0.053)	-0.086 (0.060)	-0.090 (0.058)	-0.083 (0.058)
Black	-0.031 (0.091)	-0.018 (0.093)	-0.019 (0.092)	-0.210* (0.096)	-0.210* (0.096)	-0.207* (0.095)	-0.108 (0.081)	-0.109 (0.081)	-0.101 (0.081)	0.038 (0.092)	0.039 (0.091)	0.038 (0.090)
Hispanic or Latino/a/x	0.069 (0.164)	0.079 (0.167)	0.080 (0.167)	-0.307 (0.192)	-0.319 (0.191)	-0.312 (0.190)	-0.351 (0.181)	-0.351 (0.180)	-0.351 (0.179)	-0.080 (0.179)	-0.087 (0.181)	-0.081 (0.178)

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Asian, Pacific Islander, 2+ races, Other	-0.293	-0.287	-0.294	-0.398	-0.403	-0.401	-0.301	-0.294	-0.299	-0.142	-0.133	-0.162
	(0.238)	(0.241)	(0.239)	(0.273)	(0.274)	(0.270)	(0.249)	(0.246)	(0.244)	(0.281)	(0.274)	(0.277)
Enrollment (logged)	-0.019	-0.019	-0.018	-0.014	-0.018	-0.014	-0.019	-0.019	-0.018	-0.036	-0.039	-0.035
	(0.013)	(0.014)	(0.013)	(0.013)	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)	(0.023)	(0.022)	(0.022)
Teacher characteristics												
Black	0.015	0.011	0.013	-0.021	-0.017	-0.021	-0.028	-0.028	-0.023	-0.040	-0.036	-0.038
	(0.024)	(0.025)	(0.025)	(0.016)	(0.016)	(0.016)	(0.018)	(0.018)	(0.017)	(0.026)	(0.026)	(0.026)
Hispanic or Latino/a/x	0.056	0.049	0.049	-0.014	-0.016	-0.013	-0.022	-0.025	-0.018	0.014	0.018	0.016
	(0.109)	(0.109)	(0.110)	(0.041)	(0.041)	(0.040)	(0.043)	(0.043)	(0.043)	(0.054)	(0.055)	(0.055)
Asian, Pacific Islander, 2+ races, Other	0.001	0.001	0.000	-0.035	-0.032	-0.036	-0.013	-0.009	-0.005	-0.067	-0.064	-0.059
	(0.037)	(0.037)	(0.037)	(0.025)	(0.025)	(0.026)	(0.037)	(0.037)	(0.035)	(0.039)	(0.040)	(0.039)
Male	-0.019	-0.018	-0.017	0.010	0.007	0.011	0.009	0.006	0.012	0.009	0.003	0.010
	(0.022)	(0.022)	(0.022)	(0.019)	(0.019)	(0.018)	(0.020)	(0.021)	(0.020)	(0.026)	(0.027)	(0.026)
Age <30	0.044	0.042	0.041	0.017	0.012	0.013	0.017	0.016	0.014	0.008	0.004	0.005
	(0.074)	(0.075)	(0.075)	(0.038)	(0.038)	(0.038)	(0.043)	(0.043)	(0.043)	(0.044)	(0.044)	(0.044)
Age 46-54	-0.064**	-0.064**	-0.064**	-0.000	0.002	0.001	0.012	0.012	0.009	-0.031	-0.029	-0.030
	(0.023)	(0.023)	(0.023)	(0.019)	(0.019)	(0.019)	(0.019)	(0.018)	(0.019)	(0.026)	(0.026)	(0.027)
Age 55-59	-0.047	-0.047	-0.048	-0.006	-0.002	-0.006	-0.006	-0.007	-0.007	-0.000	0.000	-0.000
	(0.030)	(0.030)	(0.029)	(0.022)	(0.023)	(0.022)	(0.021)	(0.021)	(0.021)	(0.032)	(0.032)	(0.032)
Age 60+	-0.065*	-0.069*	-0.069*	-0.015	-0.013	-0.013	0.002	0.003	0.002	-0.032	-0.030	-0.030
	(0.029)	(0.029)	(0.029)	(0.021)	(0.021)	(0.021)	(0.025)	(0.025)	(0.025)	(0.038)	(0.038)	(0.038)
Teacher certification												

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Interim or temporary certification	0.489** (0.170)	0.500** (0.170)	0.506** (0.170)	-0.047 (0.045)	-0.054 (0.047)	-0.041 (0.045)	-0.026 (0.041)	-0.027 (0.041)	-0.025 (0.040)	0.128* (0.060)	0.137* (0.061)	0.135* (0.061)
Legacy certification	-0.043* (0.022)	-0.045* (0.022)	-0.045* (0.022)	-0.045* (0.020)	-0.045* (0.020)	-0.045* (0.020)	-0.036 (0.026)	-0.039 (0.025)	-0.036 (0.026)	-0.024 (0.055)	-0.025 (0.055)	-0.027 (0.056)
Standard certification	0.003 (0.032)	0.007 (0.032)	0.006 (0.032)	0.013 (0.019)	0.015 (0.019)	0.016 (0.019)	0.026 (0.022)	0.027 (0.022)	0.026 (0.021)	0.031 (0.026)	0.032 (0.026)	0.032 (0.026)
First-year teacher	-0.185* (0.073)	-0.196** (0.073)	-0.195** (0.073)	-0.002 (0.069)	0.003 (0.070)	-0.000 (0.070)	0.069 (0.047)	0.066 (0.047)	0.074 (0.047)	-0.021 (0.049)	-0.019 (0.049)	-0.011 (0.049)
1-3 years teaching experience	-0.008 (0.046)	-0.006 (0.047)	-0.005 (0.047)	0.006 (0.030)	0.005 (0.030)	0.006 (0.030)	0.044 (0.037)	0.045 (0.037)	0.044 (0.036)	-0.019 (0.030)	-0.018 (0.030)	-0.017 (0.030)
School organizational conditions												
Improvement goal buy-in	-0.021* (0.009)			-0.013 (0.007)			-0.022* (0.009)			-0.020* (0.010)		
Positive school climate		-0.003 (0.009)			-0.024** (0.008)			-0.017 (0.010)			-0.032** (0.010)	
Effective school leadership			-0.007 (0.009)			-0.014 (0.007)			-0.034*** (0.010)			-0.030* (0.012)
Constant	0.221 (0.118)	0.216 (0.120)	0.206 (0.118)	0.226 (0.124)	0.275* (0.124)	0.223 (0.123)	0.267* (0.122)	0.272* (0.124)	0.259* (0.118)	0.172 (0.142)	0.223 (0.146)	0.172 (0.142)
N	1253	1253	1253	1746	1746	1746	1864	1864	1864	1329	1329	1329
R^2	0.071	0.067	0.067	0.025	0.031	0.026	0.033	0.030	0.041	0.043	0.047	0.047
Adj R^2	0.055	0.051	0.051	0.013	0.019	0.014	0.022	0.019	0.030	0.028	0.032	0.032

Note: Estimates from weighted linear probability models predicting actual transfer, shown in Equation 3, but with separate models for each year. All models include controls for leaving education or moving to a non-teaching role outside of the school so that reference category is staying in school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-20. Predictors of Leaving Michigan Public Education, by Year

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Student demographics												
Economically disadvantaged	-0.039 (0.059)	-0.033 (0.060)	-0.037 (0.060)	-0.035 (0.033)	-0.047 (0.034)	-0.035 (0.033)	0.005 (0.027)	0.002 (0.028)	0.007 (0.027)	-0.003 (0.056)	-0.026 (0.056)	-0.006 (0.057)
English learner	0.022 (0.050)	0.018 (0.052)	0.020 (0.051)	0.049 (0.087)	0.061 (0.086)	0.052 (0.086)	0.023 (0.059)	0.025 (0.059)	0.025 (0.060)	-0.020 (0.095)	-0.009 (0.097)	-0.025 (0.098)
Special education	0.000 (0.024)	-0.003 (0.024)	-0.004 (0.024)	-0.020 (0.012)	-0.022 (0.012)	-0.019 (0.012)	-0.006 (0.009)	-0.008 (0.009)	-0.007 (0.010)	0.014 (0.026)	0.012 (0.024)	0.016 (0.024)
Black	0.012 (0.054)	0.005 (0.055)	0.006 (0.054)	0.011 (0.032)	0.011 (0.032)	0.012 (0.032)	-0.001 (0.020)	-0.001 (0.020)	0.000 (0.020)	-0.001 (0.050)	-0.000 (0.050)	-0.001 (0.052)
Hispanic or Latino/a/x	0.011 (0.079)	0.005 (0.081)	0.004 (0.081)	-0.003 (0.093)	-0.008 (0.092)	-0.005 (0.093)	-0.013 (0.053)	-0.014 (0.053)	-0.014 (0.053)	-0.015 (0.124)	-0.017 (0.125)	-0.012 (0.128)
Asian, Pacific Islander, 2+ races, Other	0.007 (0.134)	0.003 (0.137)	0.010 (0.136)	0.009 (0.075)	0.007 (0.074)	0.008 (0.076)	0.119 (0.073)	0.123 (0.075)	0.121 (0.074)	-0.089 (0.140)	-0.083 (0.142)	-0.100 (0.145)
Enrollment (logged)	0.009 (0.008)	0.008 (0.008)	0.008 (0.008)	0.001 (0.005)	-0.000 (0.005)	0.002 (0.005)	-0.001 (0.004)	-0.001 (0.004)	0.000 (0.004)	0.005 (0.006)	0.003 (0.006)	0.006 (0.006)
Teacher characteristics												
Black	-0.000 (0.015)	0.002 (0.015)	-0.001 (0.015)	-0.005 (0.009)	-0.004 (0.009)	-0.006 (0.009)	0.003 (0.008)	0.003 (0.007)	0.003 (0.007)	-0.019 (0.013)	-0.017 (0.013)	-0.019 (0.013)
Hispanic or Latino/a/x	-0.038** (0.014)	-0.034* (0.014)	-0.033* (0.014)	-0.032* (0.013)	-0.032* (0.013)	-0.032* (0.013)	-0.014* (0.006)	-0.016** (0.005)	-0.016** (0.005)	0.076 (0.050)	0.078 (0.050)	0.077 (0.050)
Asian, Pacific Islander, 2+ races, Other	0.004 (0.028)	0.004 (0.029)	0.004 (0.028)	-0.022*** (0.007)	-0.021** (0.007)	-0.022*** (0.007)	-0.010 (0.016)	-0.008 (0.016)	-0.007 (0.016)	-0.033* (0.015)	-0.031* (0.015)	-0.028* (0.014)
Male	0.019 (0.014)	0.018 (0.013)	0.018 (0.014)	0.005 (0.010)	0.004 (0.010)	0.005 (0.010)	-0.010 (0.006)	-0.011 (0.006)	-0.009 (0.006)	-0.003 (0.018)	-0.007 (0.017)	-0.002 (0.018)

	(1) 2018-19	(2)	(3)	(4) 2019-20	(5)	(6)	(7) 2020-21	(8)	(9)	(10) 2021-22	(11)	(12)
Age <30	0.028	0.029	0.031	0.008	0.006	0.006	0.036*	0.036*	0.035*	-0.020	-0.022	-0.022
	(0.032)	(0.032)	(0.032)	(0.010)	(0.010)	(0.010)	(0.017)	(0.017)	(0.017)	(0.022)	(0.022)	(0.022)
Age 46-54	-0.008	-0.008	-0.008	0.014*	0.014*	0.014*	0.001	0.001	-0.000	-0.008	-0.007	-0.008
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)	(0.018)	(0.018)	(0.018)
Age 55-59	0.037	0.037	0.039	0.035*	0.036*	0.034*	-0.003	-0.004	-0.004	-0.019	-0.019	-0.020
	(0.021)	(0.021)	(0.021)	(0.016)	(0.016)	(0.016)	(0.008)	(0.008)	(0.008)	(0.016)	(0.016)	(0.016)
Age 60+	0.065*	0.068*	0.066*	0.049**	0.049**	0.048**	0.029	0.030	0.028	0.011	0.012	0.012
	(0.030)	(0.030)	(0.030)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.025)	(0.025)	(0.025)
Teacher certification												
Interim or temporary certification	0.128	0.121	0.116	0.035	0.033	0.038	-0.028	-0.028	-0.027	-0.015	-0.009	-0.011
	(0.109)	(0.109)	(0.108)	(0.045)	(0.045)	(0.045)	(0.015)	(0.015)	(0.015)	(0.025)	(0.025)	(0.025)
Legacy certification	0.015	0.016	0.016	0.001	0.001	0.001	0.010	0.009	0.010	-0.044**	-0.044**	-0.046**
	(0.037)	(0.037)	(0.037)	(0.029)	(0.030)	(0.029)	(0.029)	(0.029)	(0.029)	(0.015)	(0.016)	(0.016)
Standard certification	-0.005	-0.007	-0.007	-0.020*	-0.019*	-0.019*	-0.021*	-0.021*	-0.020*	-0.003	-0.001	-0.002
	(0.013)	(0.013)	(0.013)	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)	(0.009)	(0.015)	(0.015)	(0.015)
First-year teacher	-0.024	-0.018	-0.018	-0.007	-0.006	-0.008	0.034	0.032	0.034	-0.009	-0.007	-0.003
	(0.027)	(0.029)	(0.028)	(0.013)	(0.013)	(0.013)	(0.025)	(0.025)	(0.025)	(0.020)	(0.020)	(0.020)
1-3 years teaching experience	-0.010	-0.012	-0.012	0.026	0.026	0.027	0.012	0.012	0.012	0.012	0.013	0.013
	(0.018)	(0.019)	(0.018)	(0.019)	(0.019)	(0.019)	(0.012)	(0.013)	(0.013)	(0.022)	(0.022)	(0.022)
School organizational conditions												
Improvement goal buy-in	0.012*			-0.007			-0.011*			-0.016*		
	(0.006)			(0.003)			(0.005)			(0.007)		
Positive school climate		0.002			-0.009*			-0.008**			-0.020**	
		(0.005)			(0.004)			(0.003)			(0.007)	

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	2018-19			2019-20			2020-21			2021-22		
Effective school leadership			0.008			-0.003			-0.007			-0.017*
			(0.005)			(0.003)			(0.004)			(0.007)
Constant	-0.024	-0.020	-0.014	0.017	0.033	0.013	0.012	0.014	0.004	0.033	0.063	0.030
	(0.049)	(0.048)	(0.049)	(0.053)	(0.053)	(0.053)	(0.030)	(0.032)	(0.032)	(0.054)	(0.054)	(0.056)
N	1253	1253	1253	1746	1746	1746	1864	1864	1864	1329	1329	1329
R^2	0.053	0.048	0.050	0.031	0.033	0.029	0.030	0.026	0.025	0.023	0.024	0.022
Adj R^2	0.037	0.031	0.034	0.019	0.021	0.017	0.019	0.015	0.014	0.007	0.009	0.007

Note: Estimates from weighted linear probability models predicting actually leaving Michigan public education, shown in Equation 3, but with separate models for each year. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-21. School Organizational Conditions of Actual Turnover Behavior, by Year

		2018-19			2019-20			2020-21			2021-22	
	(1) Leave school, any	(2) Transfer	(3) Leave MI ed / retire	(4) Leave school, any	(5) Transfer	(6) Leave MI ed / retire	(7) Leave school, any	(8) Transfer	(9) Leave MI ed / retire	(10) Leave school, any	(11) Transfer	(12) Leave MI ed / retire
Improvement goal buy-in	-0.014	-0.021*	0.012*	-0.020*	-0.013	-0.007	-0.035***	-0.022*	-0.011*	-0.036**	-0.020*	-0.016*
	(0.012)	(0.009)	(0.006)	(0.008)	(0.007)	(0.003)	(0.010)	(0.009)	(0.005)	(0.012)	(0.010)	(0.007)
Positive school climate	-0.006	-0.003	0.002	-0.031***	-0.024**	-0.009*	-0.028**	-0.017	-0.008**	-0.051***	-0.032**	-0.020**
	(0.011)	(0.009)	(0.005)	(0.009)	(0.008)	(0.004)	(0.011)	(0.010)	(0.003)	(0.012)	(0.010)	(0.007)
Effective school leadership	-0.001	-0.007	0.008	-0.018*	-0.014	-0.003	-0.038***	-0.034***	-0.007	-0.048***	-0.030*	-0.017*
	(0.011)	(0.009)	(0.005)	(0.008)	(0.007)	(0.003)	(0.011)	(0.010)	(0.004)	(0.013)	(0.012)	(0.007)
Safe school & positive student behavior	-0.015	-0.013	-0.001	-0.040***	-0.028**	-0.009*	[a]	[a]	[a]	-0.047***	-0.032**	-0.015*
	(0.014)	(0.009)	(0.006)	(0.009)	(0.009)	(0.004)				(0.013)	(0.011)	(0.007)
Human resources hindrances	[a]	[a]	[a]	[a]	[a]	[a]	0.007	-0.004	0.002	0.030*	0.014	0.011
							(0.011)	(0.010)	(0.004)	(0.015)	(0.011)	(0.006)
Adequate teacher resources and capacity	[a]	[a]	[a]	[a]	[a]	[a]	-0.002	0.004	-0.003	-0.034**	-0.027**	-0.010
							(0.010)	(0.008)	(0.003)	(0.012)	(0.009)	(0.007)
Student pandemic challenges	[a]	[a]	[a]	[a]	[a]	[a]	0.023*	0.012	0.002	0.013	0.011	0.005
							(0.011)	(0.011)	(0.003)	(0.016)	(0.013)	(0.010)
N	1,219–1,253			1,730–1,746			1,009–1,864			753–1,329		

[a] Construct data not collected for given year

Note: Estimates from separate weighted linear probability models with a full set of school and teacher covariates, and year fixed effects (shown in Equation 3). Constructs included one at a time, so each cell provides an estimate from a separate model. Full model output is in the appendix. Range is largest for 2020-21 and

2021-22 because the student pandemic challenges construct has substantially more missingness than the others. This is because teachers were more likely to select "I don't know" in response to one or more of the questions asking about their students' challenges. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

- **IV-II. Tables using peer (jackknife) constructs**

Table E-22. School Organizational Conditions of Actual Turnover Behavior, by Year

	2018-19			2019-20			2020-21			2021-22		
	(1) Leave school, any	(2) Transfer	(3) Leave MI ed/retire	(4) Leave school, any	(5) Transfer	(6) Leave MI ed/retire	(7) Leave school, any	(8) Transfer	(9) Leave MI ed/retire	(10) Leave school, any	(11) Transfer	(12) Leave MI ed/retire
Improvement goal buy-in	0.013	0.016	0.010	-0.037	-0.022	-0.007	-0.004	0.013	-0.017+	-0.026	-0.043+	0.004
	(0.025)	(0.020)	(0.012)	(0.025)	(0.025)	(0.007)	(0.022)	(0.018)	(0.009)	(0.028)	(0.025)	(0.012)
Positive school climate	-0.028	-0.028+	0.006	-0.046*	-0.029	-0.013+	-0.031+	-0.027+	-0.012	-0.048+	-0.060*	0.006
	(0.020)	(0.017)	(0.008)	(0.021)	(0.020)	(0.007)	(0.018)	(0.014)	(0.008)	(0.029)	(0.025)	(0.013)
Effective school leadership	-0.020	-0.020	0.006	-0.037+	-0.026	-0.007	-0.017	-0.004	-0.011	-0.015	-0.041+	0.018+
	(0.020)	(0.018)	(0.006)	(0.020)	(0.019)	(0.005)	(0.015)	(0.013)	(0.009)	(0.025)	(0.022)	(0.011)
Safe school & positive student behavior	-0.025	-0.028+	0.013	-0.037*	-0.026	-0.008	.	.	.	-0.047*	-0.054**	0.001
	(0.019)	(0.015)	(0.009)	(0.018)	(0.018)	(0.006)	.	.	.	(0.022)	(0.020)	(0.010)
Human resources hindrances	.	.	.	.	.	.	-0.036	-0.021	-0.005	0.004	0.023	-0.010
	.	.	.	.	.	.	(0.025)	(0.019)	(0.014)	(0.029)	(0.024)	(0.011)
Adequate teacher resources and capacity	.	.	.	.	.	.	-0.014	0.000	-0.003	-0.045	-0.026	-0.022
	.	.	.	.	.	.	(0.020)	(0.017)	(0.009)	(0.034)	(0.026)	(0.020)
Student pandemic challenges	.	.	.	.	.	.	-0.011	0.001	-0.011	0.017	-0.019	0.040*
	.	.	.	.	.	.	(0.026)	(0.021)	(0.009)	(0.035)	(0.028)	(0.019)
	N=1,153–1,185			*N*=1,679–1,695			*N*=894–1,821			*N*=669–1,289		

[a] Construct data not collected for given year

Note: Estimates from separate weighted linear probability models with a full set of school and teacher covariates, and year fixed effects (shown in Equation 3). Constructs included one at a time, so each cell provides an estimate from a separate model. Full model output is in the appendix. Range is largest for 2020-21 and 2021-22 because the student pandemic challenges construct has substantially more missingness than the others. This is because teachers were more likely to select "I don't know" in response to one or more of the questions asking about their students' challenges. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

V. Partially Mediated Models Predicting Actual Turnover Behavior

Table E-23. Estimates from partially mediated models predicting actual behavior (leave school, any) with and without intent

	Teacher						Peer					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Buy-in		Climate		Leadership		Buy-in		Climate		Leadership	
Organizational condition construct	-0.028*** (0.006)	-0.012 (0.006)	-0.031*** (0.006)	-0.012* (0.006)	-0.028*** (0.006)	-0.010 (0.006)	-0.013 (0.012)	-0.002 (0.012)	-0.041*** (0.012)	-0.029* (0.011)	-0.022* (0.011)	-0.011 (0.010)
Intent to transfer		0.222*** (0.023)		0.222*** (0.023)		0.222*** (0.023)		0.224*** (0.022)		0.220*** (0.022)		0.219*** (0.022)
Intent to leave		0.172*** (0.025)		0.173*** (0.025)		0.174*** (0.025)		0.176*** (0.024)		0.174*** (0.024)		0.172*** (0.024)
N	6,192	6,192	6,192	6,192	6,192	6,192	6,072	6,072	6,038	6,038	6,006	6,006
R2	0.027	0.076	0.028	0.076	0.027	0.075	0.017	0.070	0.021	0.072	0.019	0.069
Adjusted R2	0.023	0.072	0.024	0.072	0.023	0.071	0.013	0.066	0.017	0.068	0.015	0.065

NOTE: Regression coefficients from weighted linear probability models shown in Equation 3 (odd-numbered columns) and Equation 4 (even-numbered columns). All models include year fixed effects and controls for teacher demographics (race/ethnicity, gender), certification type (interim/temporary, legacy, and standard, with professional certification as the reference category), and experience (first-year teacher, and 1-3 years experience, with 4+ years as the reference category). Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-24. Estimates from partially mediated models predicting actual behavior (transfer) with and without intent

	Teacher						Peer					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Buy-in		Climate		Leadership		Buy-in		Climate		Leadership	
Organizational condition construct	-0.020*** (0.005)	-0.010* (0.005)	-0.021*** (0.005)	-0.008 (0.005)	-0.023*** (0.005)	-0.010 (0.005)	-0.010 (0.011)	-0.003 (0.011)	-0.039*** (0.010)	-0.030** (0.010)	-0.023* (0.010)	-0.015 (0.009)
Intent to transfer		0.187*** (0.022)		0.187*** (0.022)		0.185*** (0.022)		0.185*** (0.021)		0.184*** (0.021)		0.183*** (0.021)
Intent to leave		0.031 (0.017)		0.033* (0.017)		0.032 (0.017)		0.029 (0.016)		0.027 (0.016)		0.029 (0.016)
N	6,192	6,192	6,192	6,192	6,192	6,192	6,072	6,072	6,038	6,038	6,006	6,006
R2	0.032	0.069	0.031	0.068	0.033	0.069	0.021	0.059	0.025	0.063	0.023	0.060
Adjusted R2	0.028	0.065	0.027	0.064	0.029	0.065	0.017	0.055	0.021	0.059	0.019	0.056

NOTE: Regression coefficients from weighted linear probability models shown in Equation 3 (odd-numbered columns) and Equation 4 (even-numbered columns). All models include year fixed effects and controls for teacher demographics (race/ethnicity, gender), certification type (interim/temporary, legacy, and standard, with professional certification as the reference category), and experience (first-year teacher, and 1-3 years experience, with 4+ years as the reference category). Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E-25. Estimates from partially mediated models predicting actual behavior (leave MI education) with and without intent

	Teacher						Peer					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Buy-in		Climate		Leadership		Buy-in		Climate		Leadership	
Organizational condition construct	-0.008*	-0.001	-0.009***	-0.003	-0.006*	0.000	-0.003	0.002	-0.002	0.002	0.001	0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)
Intent to transfer		0.034***		0.033***		0.035***		0.038***		0.038***		0.040***
		(0.009)		(0.009)		(0.010)		(0.009)		(0.009)		(0.009)
Intent to leave		0.144***		0.143***		0.145***		0.147***		0.148***		0.149***
		(0.019)		(0.018)		(0.019)		(0.019)		(0.019)		(0.019)
N	6,192	6,192	6,192	6,192	6,192	6,192	6,072	6,072	6,038	6,038	6,006	6,006
R2	0.015	0.070	0.016	0.070	0.014	0.070	0.012	0.073	0.013	0.073	0.013	0.074
Adjusted R2	0.011	0.066	0.012	0.066	0.010	0.066	0.009	0.069	0.009	0.069	0.009	0.070

NOTE: Regression coefficients from weighted linear probability models shown in Equation 3 (odd-numbered columns) and Equation 4 (even-numbered columns). All models include year fixed effects and controls for teacher demographics (race/ethnicity, gender), certification type (interim/temporary, legacy, and standard, with professional certification as the reference category), and experience (first-year teacher, and 1-3 years experience, with 4+ years as the reference category). Model predicting transfer includes control for intent to leave Michigan public education, so reference category is remaining in the school. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$