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Explaining the gap in charter and traditional public school teacher turnover rates

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ABSTRACT

This study uses national survey data to examine why charter school teachers are more likely to turnover than their traditional public school counterparts. We test whether the turnover gap is explained by different distributions of factors that are empirically and theoretically linked to turnover risk. We find that the turnover rate of charter school teachers was twice as high as traditional public school teachers in 2003–04. Differences in the distributions of our explanatory variables explained 61.0% of the total turnover gap. The higher proportions of uncertified and inexperienced teachers in the charter sector, along with the lower rate of union membership, were the strongest contributors to the turnover gap. Charter school teachers were more likely to self-report that working conditions motivated their decisions to leave the profession or move schools, although we found no measurable evidence that the actual working conditions of charter and traditional public schools were different.

1. Introduction

Prior studies have established that turnover rates – both attrition and school-to-school mobility – are significantly higher among charter school teachers than traditional public school (TPS) teachers (Miron & Applegate, 2007; Podgursky & Ballou, 2001; Smith & Ingersoll, 2004). The reasons for this disparity in turnover rates, however, are not well understood. In light of the importance of teacher quality to student achievement (Aaronson, Barrow, & Sander, 2007; Kane, Rockoff, & Staiger, 2006; Rivkin, Hanushek, & Kain, 2005), this stands as an important gap in the literature.

The purpose of this paper is to assess whether the charter–TPS "turnover gap" can be explained by different distributions of observable teacher- and school-level factors that are empirically and theoretically linked to turnover risk. Using data from the National Center for Education Statistics' (NCES) 2003–2004 Schools and Staffing Survey (SASS), we test whether the turnover probability of charter school teachers is statistically different from TPS teachers after conditioning on teacher characteristics, school contextual factors, working conditions, and personnel policies. A non-linear decomposition technique proposed by Fairlie (2005) is used to quantify how much of the charter–TPS turnover gap is explained by differences in the distributions of these factors. The decomposition analysis is augmented with a comparative analysis of charter and TPS teachers' self-reported reasons for leaving the profession or moving schools using data from the NCES 2004–2005 Teacher Follow-up Survey (TFS).

2. Teacher turnover and educational quality

The current research base on charter schools lacks empirical evidence explaining the mixed findings on the effectiveness of charter schools relative to their TPS counterparts (Betts & Loveless, 2005; Gill, Timpane, Ross, & Brewer, 2002; Zimmer et al., 2003). As the distribution

Abbreviations: CBA, collective bargaining agreements; SASS, Schools and Staffing Survey; TFS, Teacher Follow-up Survey; TPS, traditional public school.

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of teacher quality across charter and TPS schools is likely an important source of the inconsistent performance of charter schools it is important to understand why teacher turnover rates are significantly higher in the charter sector.

Teacher turnover is not uniformly detrimental to educational quality. Students and schools benefit if less-effective teachers exit the profession and other teachers make strategic moves to work in school environments that improve their productivity. Nevertheless, research calls attention to a number of troubling patterns that suggest high teacher turnover rates are often a sign that a school is struggling to build and maintain a high quality instructional environment.

For one, attrition rates are highest among those who are new to the profession (Ingersoll & Smith, 2003). Teachers make important gains in effectiveness during the early years of their careers (McCaffrey, Koretz, Lockwood, & Hamilton, 2003), and thus many are leaving the classroom before reaching their full potential. Research also shows that more effective teachers (based on value-added results), as well as those with stronger academic credentials, tend to migrate out of low-achieving urban schools, which exacerbates differences in teacher quality across schools (Boyd, Lankford, Loeb, & Wyckoff, 2005; Feng & Sass, 2008; Hanushek, Kain, & Rivkin, 2004; Henke, Chen, & Geis, 2000; Lankford, Loeb, & Wyckoff, 2002; Monk, 1994; Murnane, Singer, Willett, Kemple, & Olsen, 1991).

Furthermore, high turnover may have a disruptive influence on organizational conditions important to effective schooling, such as instructional coherence and relational trust (Bryk & Schneider, 2002; Guin, 2004). Effective schools cultivate shared beliefs among teachers regarding instructional goals and practices (Bryk & Driscoll, 1988; Fuller & Izu, 1986). The constant churning of teaching staff it is likely to make it more difficult to collaborate, develop standard norms of practice, and maintain progress towards common goals. This can lead to fragmented instructional programs and professional development plans that must be adapted each year to meet the needs of a teaching staff in constant flux (Guin, 2004).

There are also substantial pecuniary costs associated with teacher turnover. These include money spent to exit the teacher from the school, recruit and hire a new teacher and/or fill the vacancy with a substitute until a new teacher can be hired, and train the new teacher. In some schools, costs include signing bonuses and school material stipends granted to new teachers. Nationally, it is estimated that the costs of replacing all teachers who leave the profession and transfer schools is $4.9 billion (Alliance For Excellent Education, 2005). Barnes, Crowe, and Schaefer (2007) estimated the costs per teacher leaver were upwards of $15,000 for five large urban districts.

3. Data

Our decomposition analysis of the charter–TPS turnover gap relies on data from the 2003 to 2004 SASS. The SASS uses a stratified probability sample design that oversamples certain types of public schools (including charters) to ensure sufficient representation within the data. Survey weights and design variables allow for inferences to the national population of teachers and schools, however in our case we restrict the sample to sixteen states with at least four charter schools represented in the SASS.[1] The sample used in the analysis includes approximately 13,000 TPS teachers in 2500 schools and 1000 charter school teachers in 200 schools.

Data from the 2004 to 2005 TFS is used to augment the decomposition analysis with a descriptive analysis of the reasons given by charter and TPS teachers for leaving the profession or moving schools. The TFS is administered to a sub-sample of teachers who participated in the SASS in the previous year. The 2004–2005 TFS surveyed all SASS respondents who left teaching or moved schools after 2003–04 year along with a random subsample of respondents who stayed in the same school. As with the SASS, the TFS includes weights and survey design variables that allow for inferences to the entire population of U.S. public schools and teachers. The TFS sample used in the analysis includes approximately 4500 TPS teachers and 250 charter school teachers.

4. Empirical strategy

The charter–TPS gap is decomposed using a technique proposed by Fairlie (1999, 2005), which extends the standard Oaxaca–Blinder decomposition technique to non-linear models (Blinder, 1973; Oaxaca, 1973). The first step in this process is to estimate teacher turnover probabilities in the SASS sample using a binomial logit model, expressed as:

$$P_i = Pr(y_i = 1)F(X_i\hat{\beta}) = \frac{\exp(X_i\hat{\beta})}{1+\exp(X_i\hat{\beta})} \quad (1)$$

where y_1 is a binary indicator equal to 1 if teacher i left his or her school after the 2003–04 academic year.[2] F represents the cumulative distribution function from the logistic distribution. X_i is a vector of explanatory variables (described below) and $\hat{\beta}$ is the corresponding vector of coefficients. Parameters are estimated using full maximum likelihood. Standard errors are adjusted for the clustering of teachers within schools. The model includes state fixed effects.

Using the results of the binomial logit model, the mean difference in turnover probabilities for charter and TPS teachers is decomposed as follows:

$$\overline{P_i^c} - \overline{P_i^t} = \left[\sum_{i=1}^{N^c}\frac{F(X_i^c\widehat{\beta})}{N^c} - \sum_{i=1}^{N^t}\frac{F(X_i^t\widehat{\beta})}{N^t}\right] + \left[\sum_{i=1}^{N^t}\frac{F(X_i^t\widehat{\beta}^c)}{N^t} - \sum_{i=1}^{N^t}\frac{F(X_i^t\widehat{\beta}^t)}{N^t}\right] \quad (2)$$

[1] States included in the analyses were AZ, CA, CO, DC, FL, MA, MI, MN, NC, NJ, NY, OH, PA, SC, TX, WI. These 16 states all passed charter laws before 1998. Results from the full 50 state sample were not substantively different from the restricted sample. Results also were robust to the use of design weights.

[2] For the subsample of teachers who participated in both the SASS and the TFS, employment status was classified using their self-reported status on the TFS. Teachers who did not participate in the TFS were classified based on their respective principals' reporting of their employment status after the 2003–04 school year.