ANNENBERG
BROWN UNIVERSITY

EdWorkingPaper No. 20-195

Parental preferences for charter schools in North Carolina: Implications for racial segregation and isolation

Helen F. Ladd
Duke University

Mavzuna Turaeva
Duke University

We use information on the charter school choices made by North Carolina families, separately by race, who switched their child from a traditional public school (TPS) to a charter school in 2015-16 to explore how such choices affect racial segregation between schools and racial isolation within charter schools. We find that the movement of white switchers, but not minority switchers to charter schools increases racial segregation between schools. In addition, using a conditional logit model to estimate revealed preferences, we find that the value parents place on the racial composition of individual charter schools differs by the race and income of the switchers. As a result, even after we control for other valued aspects of charter schools -- such as distance from the previous traditional public school and the charter school's mission, academic performance and services offered -- the differential preferences of the switchers leads to substantial racial isolation within charter schools.

VERSION: January 2020

Suggested citation: Ladd, Helen F., and Mavzuna Turaeva. (2020). Parental preferences for charter schools in North Carolina: Implications for racial segregation and isolation. (EdWorkingPaper: 20-195). Retrieved from Annenberg Institute at Brown University: https://www.edworkingpapers.com/ai20-195

Parental preferences for charter schools in North Carolina: Implications for racial segregation and isolation.

Helen F. Ladd [1]
Mavzuna Turaeva[1]

January 2020

1. Duke University

Contact author. Helen F. Ladd, Professor Emerita, Sanford School, Duke University. Hladd@duke.edu

This research was supported by the National Center for the Analysis of Longitudinal Data in Education Research (CALDER), which is funded by a consortium of foundations. For more information about CALDER funders, see www.caldercenter.org/about-calder. All opinions expressed in this paper are those of the authors and do not necessarily reflect the views of our funders or the institutions to which the author(s) are affiliated. This paper is a more recent version of a paper circulated under the title "Choosing Charters in North Carolina: What do Parents Value?" The authors are grateful for the comments of readers and anonymous reviewers of the earlier version.

Abstract

We use information on the charter school choices made by North Carolina families, separately by race, who switched their child from a traditional public school (TPS) to a charter school in 2015-16 to explore how such choices affect racial segregation between schools and racial isolation within charter schools. We find that the movement of white switchers, but not minority switchers to charter schools increases racial segregation between schools. In addition, using a conditional logit model to estimate revealed preferences, we find that the value parents place on the racial composition of individual charter schools differs by the race and income of the switchers. As a result, even after we control for other valued aspects of charter schools -- such as distance from the previous traditional public school and the charter school's mission, academic performance and services offered -- the differential preferences of the switchers leads to substantial racial isolation within charter schools.

1. Introduction

Parental choice is at the center of the charter school movement. In contrast to most traditional public schools with specified attendance zones, all charter schools are schools of choice with no students assigned to them. Among the arguments for expanding parental choice are that parents have a right to choose schools for their children, that parental choice will lead to a better match between the educational needs and goals of their children and the schools they attend, or that parental choice will put competitive pressure on traditional schools and, thereby, spur them to improve. On a more negative note, parental choice may lead to greater racial segregation. Given the centrality of parental choice to the charter school movement, the purpose of this paper is to enrich our understanding of the choices North Carolina parents make among the charter schools available to them with an explicit focus the choices made by three (overlapping) groups of students: underrepresented minority students (which include black students) , black students, and white students. [1]

In prior research, we have documented the contribution of charter schools to racial imbalance between schools in the state's districts and metropolitan areas (Clotfelter et al, 2019) and have highlighted the increasing racial isolation of students in North Carolina charter schools over time (Ladd et al, 2017). In the present paper, we use data on all North Carolina students who switched from traditional public schools to charter elementary or middle schools

[1] We use the term "racial" preferences throughout as a short-hand for preferences related to race or ethnicity. We examine the decisions of three groups: minority students, which we define as underrepresented minorities including blacks, Hispanics and non-Asian others: black students which are a subset of the larger minority group, and white non-Asian students. We exclude Asian students from the analysis to focus on disadvantaged minorities.

for the 2015/16 school year to explore two interrelated research questions. The first, and most straightforward, is the extent to which the decisions of the switchers increase racial segregation across schools. For this analysis, we compare the racial mix of the chosen charter school to the racial mix of the traditional public school that each switcher leaves behind, separately by racial group. We find that by switching to charter schools that are whiter than the traditional public schools they leave behind, white switchers contribute to racial segregation across schools, In contrast, the movement of minority students to charter schools does not increase racial segregation and may slightly reduce it. Even though many minority switchers choose charter schools with high minority shares, such shares are often lower than those in the traditional public schools they leave behind.

For the second research question, we take as given the decision of a family to move a child from a traditional public school to a charter school within 20 miles and use conditional logit models to determine the value that different racial and economic subgroups place on various characteristics of charter schools. In addition to the racial mix of the students in each charter school, which is of primary interest in this study, our models include charter school characteristics that are of interest in their own right and might be correlated with a school's racial mix. These include the academic performance of the school, the distance to the charter from the student's traditional public school, whether the school provides lunch or transportation services, and the distinctive mission or approach of the charter.

Although our empirical methods for this second research effort are similar to those used in other recent studies of the revealed educational preferences of parents (see discussion in section 2), this paper differs in several respects. First, our focus on parental preferences for a single type of choice option, namely charter schools, allows us to identify clearly defined choice

sets for each switcher. Second, we examine charter school choices throughout a large and diverse state. Given that many of the charter schools in North Carolina are located outside cities and the state is large and varied, this statewide perspective provides a broader perspective on parental preferences than those provided by studies of charter choices within individual cities. Third, we examine asymmetry in preferences between minority (or black) and white students across a wide range of charter school characteristics, including their racial mix, average levels of student performance, school mission, and the availability of provision of transportation and lunch services. .

The paper proceeds as follows. We review the relevant literature in section 2, describe the North Carolina context and data in section 3, and report results for racial segregation in section 4. We then spell out the conditional logit model in section 5, describe the charter characteristics that parents may value in section 6 and report our findings related to the revealed preferences of elementary and secondary switchers in section 7. The paper ends with a concluding discussion.

2. Existing Literature

We first review studies designed to determine the extent to which choice programs have increased segregation, with particular attention to segregation by race. We then summarize the methodologies that have been used in the growing and increasingly rich body of research that explores what parents value when they are making educational choices.

Choice and racial segregation

The theoretical predictions of how charter schools will affect racial segregation between schools are unclear. Racial segregation refers to the degree of imbalance of racial groups across schools. On the one hand, charter schools may increase racial segregation if members of different

racial groups use charter schools to put their children in schools with other children of the same race. Further, that segregating effect will be exacerbated if at least one group, say white families, prefer to avoid schools with children of the other race. On the other hand, if the traditional public schools are already highly segregated, the availability of choice in the form of charter schools may give black or Hispanic students an opportunity to enroll in a schools with higher proportions of white students, thereby reducing segregation across schools.

By following the movement of individual students to urban charter schools in North Carolina over time in the period 2000/01 and 2001/02 Bifulco and Ladd (2007) concluded that charters increased segregation. Specifically , they found that black students left public schools that were on average 53 percent black in favor of blacker charter schools, averaging 72 percent black students, and white students left public schools that were 18 percent white in favor of charters that were 25 percent white. Similar patterns have also emerged in other states and districts (Booker et al, 2005; Garcia, 2008; Weiher &Tedin, 2002; and Zimmer et al., 2009) but the pattern is not universal. In the highly racially segregated school systems of Chicago and Milwaukee, for example, researchers have found that black students have transferred to charter schools that are more racially balanced than the schools they left behind. In a recent study of the Little Rock metropolitan area, researchers found that transfers to charters reduced segregation somewhat in the traditional public schools, and did not increase overall segregation (Ritter et al, 2016). Finally, based on a national longitudinal data set, Monarrez et al, (2019), report small segregating average effects of charter schools but with considerable heterogeneity across states and by district type.

Researchers have also examined the segregating effects of other types of choice programs. One study, for example, examined the effects of three school choice programs in the

San Diego Unified School District: a Voluntary Ethnic Enrollment program (VEEP) that provided transportation, a magnet program, and an open enrollment program (Koedel et al. 2009). While two of the programs increased segregation, the VEEP program decreased it. In a study of how Louisiana's state voucher program affected racial stratification, Egalite et al. (2017) find that 82 percent of the transfers reduced racial stratification in the sending schools, but increased it somewhat in the receiving schools, with the patterns differing somewhat depending on the racial category of transfers. As in the present study, the researchers examine a state-wide choice program, but, unlike the present study for which we are able to include most switchers to charter schools, they were able to include only about a third of the state's 5000 voucher users.

Measuring what parents value in K-12 educational choice contexts.

The simplest, but clearly not the best, approach to determining what aspects of schools parents value is to ask them. The standard conclusion from telephone or other surveys of parents conducted mainly in the late 1990s is that parents value academic quality (Armor and Peiser 1998). Although some surveys may be useful for understanding what types of skills – such as the development of critical thinking or test- taking skills -- different groups of parents might value (see Zeehandelaar & Winkler eds, 2013), surveys of preferences have limited usefulness in the context of school choice decisions. Based on comparisons of the stated preferences of about 2500 Indianapolis parents whose children switched to 15 charter schools, for example, Stein et al, (2009) documented that even though many of the surveyed parents listed academic performance as their top priority, only about half the sample moved from a lower to a higher performing school. As the authors conclude, surveys are limited because respondents often answer in ways they believe are socially desirable and because it is often

difficult for researchers to ask pointed questions about race, ethnicity and social class that may contribute to the actual school choices parents make.

A better strategy is to use a revealed preference approach, that is, to infer parental preferences from the actions they take. In a clever early study that moves in this direction, Schneider and Buckley (2002) analyze the school characteristics that parents looked for through an official internet site to inform school choices as part of Washington, DC's choice program in the late 1990s. They find that while parents care somewhat about a school's academic characteristics, they also care about the demographic composition of the student body, a finding that highlights the role of peers in the school choice process. A similar finding emerges from a study that uses the size of charter school waitlists in Pennsylvania as a proxy for parental preferences (Adzima,2014). Reback (2008) takes a more macro approach by examining transfer applications across districts under Minnesota's open enrollment program. Although his simple estimates suggest that transfer applicants were seeking higher relative mean test scores, once he controls statistically for other district characteristics such as mean income and house values, he concludes that the contribution of test scores to transfer demand is quite small.[2]

Recent research relies on the school choice preferences revealed by rank ordered school applications data. Examples of this approach appear in studies of the choice programs in England (Burgess et al. (2014)) and in the U.S. cities of New Orleans (Harris &Larson (2015)) and Lincove et al.(2018)); Washington DC (Glazer and Dotter (2017); and New York City Abdulkadiroglu et al.,(2017). In these studies, the researchers estimate conditional or ranked choice logit models based on the stated preferences of choosers for specific schools to determine

[2].Of more potential policy relevance than the results on the demand side are the findings from his supplemental analysis of the determinants of rejections. In that analysis, he shows that the more advantaged districts are the ones most likely to reject transfer applications, thereby restricting the ability of families to access those districts.

how choosers (or subsets of choosers) value the various characteristics of schools. Unlike the English study (Burgess et al, 2014), in which the authors were forced to impute some of the choices because of missing information on the stated preferences, the studies of the U.S. cities all benefitted from centralized school application procedures closely linked to the school allocation process. Further, the application systems in all three cities were carefully designed to elicit true preferences by minimizing the incentives for strategic listing of school choices.

The various studies in this genre focus on a variety of issues. In their study of school choice in New Orleans, where charter schools now comprise a large share of all schools and parents can apply to as many as eight schools, Lincove and her coauthors (2018) focus on the choice of privately operated versus public schools. A separate study of choice in New Orleans (Harris & Larsen (2015) focuses attention on the relative values of academic quality, extra-curricular activities such as football and band, and indirect costs such as distance and the absence of after -school care. Perhaps because of these indirect costs, the authors find that the lowest income students appear to have weak preferences for school performance, a finding that is consistent with that of Hasting et al. (2009) in their study of public school choice in Charlotte, NC.

A particularly ambitious study of parental choices uses data from Washington, D.C.'s common lottery on applicants to 200 public and charter schools. Included in the sample are all 23,000 students, of whom only 11 % were white, who opted to leave their neighborhood schools at all three levels of schooling. Using a rank-ordered logit model, they find that parents value distance (measured in various ways), student body composition (measured as percent of students from low-income families and the percent of students with the same race as the chooser) and academic performance (measured by various indicators), although with considerable

heterogeneity across choosers. Emerging from all these and similar studies is that parents care about the composition of students in a school, distance to the school, and various other school characteristics.

Finally, in one section of a broader analysis of the racial implications of charters in North Carolina, Bifulco and Ladd (2007) report results from conditional logit models that are similar in spirit to the models we report below. Their analysis is based on children in elementary and middle schools who switched from traditional public schools to a charter school in the years 2000/2001 and 2001/2002 within the state's five largest metropolitan areas. A significant difference between that study and many of the studies described earlier is that the choices are the actual schools in which the children enrolled, rather than those that were stated as preferred in an application process. The authors conclude that the most preferred racial mix of students in charter schools for black families is between 40-60 percent black but for white families is less than 20 percent black (Bifulco and Ladd, 2007). The implication of these asymmetric preferences is that few charters will end up with racially mixed student populations. The present study further explores these asymmetries in the North Carolina context based on a much larger set of charter schools and a more complete set of school characteristics.[3]

3. North Carolina context, switchers and choice sets

[3] In a more ambitious study along these same lines but not restricted to charter schools, researchers used national survey data from the Early Childhood Longitudinal Study to match actual schools attended by sampled fifth grades in 2004 with other nearby schools including regular public schools, magnet schools, charter schools and various types of religious schools. The researchers estimated a modified conditional logit model that include a large range of household characteristics as well as school characteristics. Surprisingly in light of most charter school research, the researchers concluded that families do not choose a charter school because of it racial or ethnic composition and that race and ethnicity with a household do not influence it choice of charter schools (Butler at al, 2013). One possible explanation for this finding is that fewer than 1 percent of the students in their sample attended charter schools.

North Carolina legislation enabled charter schools in 1996 with a cap of 100 schools that was lifted in 2011. As of 2015-16 there were 159 charter schools, 15 of which were new in that year (including two online charters), and the total charter school student population was 82,730.[4] In 2016, 23,867, or 29 percent of charter school students were enrolled in predominantly white charters (those that were less than 20 percent minority) and 18,919, or 23 percent, of students were enrolled in charter schools with more than 80 percent minority students.

We focus here on the families who moved their children from traditional public schools to charter school serving elementary or middle school grades for the 2015-16 school year. We include all elementary and middle charter schools, except those that were newly established in that year because parents would have had no information on the racial mix or the test scores of the students. For the estimation model, we use lagged racial mix and performance information namely data for the 2014-15 academic year, information that would have been available to switchers in 2015-16. All the data on students' movements, as well as charter school characteristics such as the racial mix of the charter schools and their academic performance levels come from the North Carolina Education Research Data Center (NCERDC). Other charter-specific data comes from charter school websites and parent handbooks.

The switchers

The starting point for both research questions is all the students in charter schools in grades K-8 in 2015-16 who were observed in a traditional public school the previous year. That excludes students in newly established charter schools and students who came from a different charter school, from a home school, or from out of state. We also exclude from the analytic data

[4] As of 2017-18, the number of charter schools had increased to 173, with 15-20 more expected to open in the following year.

set any switcher who does not have at least two distinct charter schools in her choice set so that we can observe the switcher making a decision.

We report patterns for three groups: minority students (defined as black, Hispanic and other underrepresented minorities); black students: and non-Asian white students. We exclude the small group of Asian student-switchers in order to focus on minority groups that are more likely than Asians and whites to be disadvantaged. We are able to report separate patterns for black switchers because they account for about two thirds of the minority switchers. Although Hispanic students currently represent a rapidly growing ethnic group in the state, their numbers are too small for us report separate results for them. The 2,880 minority switchers come from 569 traditional public schools and 1,888 white switchers come from 518 schools. The sample of middle school students, who transferred to a charter school within a 20-mile radius and have more than one choice of charter in their choice set, excluding switchers to new schools, includes 1,447 minority students and 1,236 white students from 507 and 479 traditional public schools respectively.

Table 1 describes grade level the children who switched into elementary or middle grades in charter schools. The students in the kindergarten group include only those who were enrolled in a public pre-kindergarten program because to include them in the sample we need information on the public school from which they came. For the upper grades (grades 4-5 in panel A and grades 6-8 in panel B) for which we have student-level data on (standardized) test scores and absentee rates, we are able to describe the switchers relative to the students in the public schools they left behind. The clearest pattern emerges for the 6^{th} grade switchers. Those switchers outperformed their former classmates on reading and math tests but also had higher absentee rates. The patterns in the other grades are more mixed.

The choice sets

As we explain below, the concept of choice sets is central to our models of what switchers value as they choose charter schools. To define the choice set for each switcher, we first determine the straight-line distance between each relevant traditional public school and each charter (using ArcGIS).[5] The use of the prior traditional public school has the advantage of allowing us to use fixed effects to specify switchers who have identical sets of charter schools from which to choose. We find that about 77 percent of the elementary school switchers and about 76 percent of the middle school switchers choose schools within 10 miles[6], with somewhat higher percentages for minority students than for white students. Only 5 or 6 percent choose schools that are more than 20 miles away from the current school, which makes 20 miles a reasonable boundary for each choice set.

4. Do the choices of switchers increase racial segregation?

Our focus in this section is whether the members of each racial group choose charter schools that have higher or lower proportions of minority students than the traditional public schools they left. Table 2 shows the patterns.

Consider first the white switchers at both levels of schooling. While about 15 percent switched to a charter with a higher share of minority students (about 13 percent of the middle school switchers), a full two thirds (and 72 percent at the middle school level) switched to charters with lower shares of minority students. This pattern implies that as they move to charter

[5] Although a case can made for starting with each switcher's place of residence rather than the relevant public school, the required data on residential locations are incomplete. Hence it is not possible for us to determine the extent the extent to which some families select charter schools that require either longer or shorter commutes than those to their current school.

[6] Note that these numbers are based on the unrestricted sample, including switchers who have less than two choices of charters in their choice set, excluding switchers to new charters.

schools, white students on average contribute to greater racial segregation. The story differs for minority (and also for the subset of black) switchers. About 30 percent of minority switchers at both levels chose charters with student racial compositions very similar (that is, minority shares within +5/-5 percentage points) to the schools they left. Moreover, smaller proportion of the minority or black switchers chose charters that had higher minority shares than those who chose charters with lower minority shares. Thus, the choices of minority students do not lead to greater racial segregation.

While these descriptive patterns imply that it is the choices of white families, but not those of black families on average, that cause charter schools to increase racial segregation, one might be tempted to ask whether such patterns simply reflect the availability or lack thereof of nearby charter schools. Perhaps, for example, the patterns would be different if we were to take into consideration the distance to charter schools, and the size of the available charters. To that end, the entries shown in Table 3 are coefficients from conditional logit models that include distance measures and the log of enrollment as control variables, and are reported as odds ratios. Thus, an entry greater than one implies the switcher is more likely to choose a school that differs from the traditional public school in the specified manner relative to a school with a similar racial mix while a coefficient less than one implies that the switcher is less likely to choose that type of charter school.

For white switchers at both the elementary and the middle school levels, the addition of the control variables does not alter the conclusion that their choices are contributing to greater racial segregation, as is evident from the monotonically increasing odds ratios that signify moves to schools with lower minority shares. For the full group of minority switchers, the patterns are also consistent with the simple descriptive patterns. At both levels of schooling, the odds that

minority switchers choose charters that have either greater or smaller shares of minorities relative to their original school are below one which implies that they prefer charter schools with minority shares that are similar to those in the schools they left. Thus, as a group, minority switchers do not make choices that increase racial segregation, and many make choices that reduce it.

5. Model of revealed preferences.

In a standard multinomial choice model, the analysis would typically focus on the characteristics of the choosers, such as their income, race, or gender, with the goal of determining which groups are more likely to favor one option over another. In the conditional logit model developed by McFadden (1974), the focus switches to the characteristics of the choice options. In the present context, that means the characteristics of the charter schools, such as the racial mix of the students in the school, the achievement level of its students, the distance to the charter and various other characteristics that differ across charter schools. By choosing a specific charter with certain characteristics over other charter schools, the family is revealing its preferences for those characteristics over others. When many families make choices among charter schools that differ along a number of dimensions, it is possible to infer preferences from the estimated coefficients of the conditional logit model.

One convenient feature about working with charter school choices is that the set of charter schools available to each family is quite well defined. If travel distance to a charter were not an issue, in principle each family could choose any charter school in the state. Because distance matters, however, we have restricted each family's choice set to the charter schools located within 20 miles of the public school in which the child was enrolled in the previous year and control statistically for the distance to each charter school in the choice set. In the following

explanation, we refer to the choice of charters offering elementary school grades, but similar logic applies to those offering middle school grades.

Each family i who switches their child to an elementary charter school in a particular year from the jth traditional public school (TPS) has precisely the same set of charter schools from which to choose, namely the charter schools offering elementary grades within 20 miles of the public school. Families with children in a different traditional public school would have a different choice set that may or may not be overlapping with that of the families in the jth TPS.

Within a choice set, a parent has a choice of charter schools indexed c= 1,……n.

Each parent i currently in the jth TPS could derive utility from each charter school as follows:

$$U_{ijc} = V_{ijc} + \varepsilon_{ijc}$$

where V_{ijc} is a deterministic linear function of the following form where X_{ijc} is a vector of charter school characteristics in the choice set of ith family switching from jth TPS:

$$V_{ijc} = X_{ijc}\beta$$

and ε_{ijc} is a random component of the utility.

We assume that the family chooses the charter that provides the highest utility over any other charter. That is school c will be chosen if:

$$\Pr\left(U_{ijc} > U_{ijt}\right), \quad for\ \forall\ t \neq c$$

Assuming the error is independent and identically distributed as a Type I extreme value distribution, the probability of a particular charter school being chosen is

$$P(chosen = 1)_{ijc} = \frac{\exp\left(\sum_{i\in I, j\in J} X_{ijc}\beta\right)}{\sum_{c\in C} \exp\left(\sum_{i\in I, j\in J} X_{ijc}\beta\right)}$$

which in turn can be estimated using a maximum likelihood procedure and interpreted as

$$\log\left(\frac{P_{ijc}}{1-P_{ijc}}\right) = \sum_{i,j=1}^{I,J} X_{ijc}\beta + \delta_j + \varepsilon_{ic} \qquad (1)$$

Importantly, the model includes fixed effects (δ_i) for each traditional public school from which the switchers come. That means that the estimates of the vector β are based on variation in choices made by switchers from the same traditional public school, that is, those that have identical choice sets. That rules out most of the bias that would arise from inferences about preferences made from the availability of charter schools anywhere is the state. Because we are interested in the extent to which the preferences of different racial and economic groups differ, we estimate the models separately by racial and economic subgroups.

Several points about this approach are worth noting. First, the model requires that the choice set of each chooser includes at least two charter schools. Second, none of the charter schools should be such close substitutes that the switchers would be indifferent between them.[7] Third, the use of fixed effects for each traditional public school means that one cannot include in the model any characteristics of the public schools from which the switcher is departing. Fourth, some switchers have a richer set of choices than other choosers given the geographic distribution of the charter schools. In general, that should not matter as long as there are sufficient choices within each switcher's choice set. In some cases, however, limited choices along some

[7] This assumption is referred to as the "independence of irrelevant alternatives." It assumes that, in a choice between A and B, the presence of a third option, C, does not alter the relative odds of choosing between A and B. That is, the choice between A and B is a function of their characteristics, which is not altered by the presence of C. The assumption would not hold if C is a close substitute for A or B.

dimensions of interest may lead to large standard errors and imprecise estimates. Finally, the basic model sheds no light on the factors that affect the family's initial decision to take a child out of a traditional public school. [8]

One potential concern about this approach is that not all children who apply to a specific charter can be admitted if the charter school is oversubscribed. As a result, the chosen charter school that we use to infer preferences may not always coincide with the switcher's most preferred charter school.[9] The fact that oversubscribed charter schools are required to accept students by lottery, however, substantially mitigates this concern. While it introduces error into the selection process, the error, at least in principle, affects all the choosers with the same choice set in the same way and should not bias the results.[10] Of somewhat greater potential concern is that some choosers may have differing amounts of information about specific charter schools and may have more or less capacity to pursue a thoughtful search process among the charters in their choice set (Villavicencio, 2014). We address that concern in part by estimating the models for different subsets of choosers defined by their race/ethnicity and income. Within any subgroup of choosers, the ability of families to gather and process information should be relatively similar which makes it possible to isolate average preferences for each subgroup.

6. Charter school characteristics that parents may value

[8] See Long (2004) for an alternative two-stage approach in the context of college choice. She first estimates a logit model to explain the decision to go to college and then estimates a conditional choice model to determine what college characteristics students value. The challenge of that approach is to determine the variables that belong in the first stage. Importantly, as Long notes, the estimates of the conditional logit model will be consistent even if the decision to attend college at all is endogenous as long as one can assume the independence of irrelevant alternatives. Given that such an assumption is reasonable in the context of our charter choice model we focus this paper on the conditional choice model alone.

9 Nonetheless, the chosen charter is still more preferred than the TPS, even though it may not be the first choice.

[10] We explored the possibility of using information on the length of waitlists for individual charter schools as a proxy for the likelihood of being admitted through the lottery process to specific schools but the information we were able to gather for individual schools was incomplete and not reliable.

We include in our full choice models five major characteristics of charter schools that parents may value: the racial mix of students, travel distance, academic performance, provision of lunch and transportation, and the school's mission. In addition, we include as a control variable the size of each charter (specified as the natural logarithm of enrollment).

Racial mix of students in the charter school. Of central interest to this study is the value parents of different groups place on the racial mix of students in the charter schools. In particular, we are interested in whether the revealed preferences regarding the racial composition of a charter school's students differ by the race of the chooser. We classify charters into five categories based on the percentages of minority students in the school, starting with 0-20 percent minority and rising to 80-100 percent minority. The base category in all the models is 40-60 percent minority so that the estimated coefficients in the conditional logit models are interpreted relative to a reasonably balanced racial mix of students in a charter school.

For the purposes of the conditional logit model, it is important that the choice sets of both the minority and the white switchers include charter schools with a variety of racial mixes. Table 4 addresses this issue by reporting distributional information in two ways. In Panel A, which shows the distribution of available charters, each entry is the number of charters included in the relevant choice sets that have the specified racial mix of students, expressed as a percentage of the aggregate number of charters in those choice sets. Both the numerator and the denominator of this percentage count many charter schools multiple times because of identical or overlapping choice sets.[11] That panel shows that minority switchers and white switchers at each level of schooling have very similar sets of schools to choose from and also that charters with

[11] This aggregate for each subgroup (e.g. elementary or middle school minority or white switchers) corresponds to the number of observations in Table 3.

40-60 and 60-80 percent minority students are far less common than those with other racial mixes.

Panel B shows the distribution of the actual choices made by the switchers of each type. Striking differences emerge in this case, with minority switchers more likely to choose charters that are majority minority and white switchers more likely to choose charters that are less than 40 percent minority. Although these patterns are highly suggestive, it would be a mistake to infer preferences about the racial mixes of charters from these patterns alone because of the other valued charter school characteristics that may be correlated with a school's racial mix.

Distance to the charter school. One such factor is distance to the school. Given that local school districts do not provide public transportation to charter schools, parents must either provide their own, use public transportation, work with other parents or through the school to organize carpools, or use bus service provided by the charter school itself. Assuming the mode of transportation can be worked out, longer distances are still likely to be less appealing to families than shorter distances because of the bigger time commitment and greater inconvenience for the child and the family.

Table 5 reports average distances by racial group for both elementary and middle school switchers. The longer travel distances for white switchers than for minority students most likely reflect that a smaller proportion of the white switchers attend charters in cities where travel distances are likely to be shorter.[12] In any case, the full models are designed to shed light on the

[12] The percentage of switchers living in cities differs across races. About 58 percent of minority and 61 percent of black switchers to elementary grades live in cities, compared to only 32 percent of white switchers. Among middle school switchers, about 64 percent of minority students, 70 percent of black students and 30 percent of white students live in cities.

relative value that switchers of different types place on travel distance, and importantly, also to rule out any confounding effects that arise because of any correlation between travel distance and a charter school's racial mix of students.

Academic quality of the charter school. The extent to which parents value academic quality as they choose charter schools is central to one of the main arguments for charter schools, namely that they will improve the quality of education. They are expected to do that through some combination of the higher quality of specific charter schools and the competitive pressure that parental choice places on other schools to improve. If parents do not make decisions based on school quality, it is hard to make the argument that charter schools will improve quality. Extensive literature shows that disadvantaged minority children typically perform less well in school than more advantaged white children. As a result, the racial mix of a school might well be highly correlated with the academic performance of a school, either in fact, or as perceived by the switchers. Hence, we include measures of academic quality in part with the goal of sorting out preferences related to racial mix from those related to academic quality.

To this end, we include three categories of academic performance based on the percentages of students in the charter school achieving at or above grade level in reading and math in the charter school in the prior year. We rely on this measure of academic performance rather than a value-added measure of the type used by Abdulkadiroglu et al. (2017), which some people might view as a better measure of school quality, because this measure is more readily available to parents and is more likely to be the information they use to judge charter school quality.[13] We define the lowest category schools as those with 0-40 percent below grade level

[13] School test-based proficiency rates in reading and math are readily available in North Carolina, and are the central component of the state's A-F rankings of school quality that are highly publicized.

and the highest as those with greater than 60 percent at grade level, with the base category 40-60 percent.[14]

Table 6 displays information on the distribution of available charter school options (Panel A) and of actual choices (Panel B) by the three school performance categories. The figure shows the aggregate set of options are quite similar across the racial groups but that the actual choices differ markedly, with white switchers far more likely than minority switchers to choose schools with high proficiency rates.

Charter school provision of lunch or transportation. NC charter school law does not require charters to provide lunch or transportation, but some schools provide them and others do not. Of interest here is the extent to which the availability of lunch serves (e.g. prepared lunch or federally subsidized prepared lunch) or transportation services (e.g., bus transportation or organized carpools) is valued by parents and affects school choices differentially by subgroup. Charters that do not provide services that are highly valued by disadvantaged families are less accessible to such families. Moreover to the extent that such services are more available in high minority charter schools than in other charters, some families may choose high-minority schools in part because those are the schools that provide the lunch and transportation services that they highly value and not simply because of their racial preferences.

We compiled information on these services directly from the web sites of charter schools.[15] Table 7 provides an overview of the extent to services of each type are available in

14 We used three rather than five performance categories because of the very small proportions of schools in the 0-20 percent and 80-100 percent categories of actual choices in those categories. .

15 We used information provided on the main web site as well as information from the Parent-Student Handbooks that were available on line. In a few cases, we telephoned the school to make sure that the information applied to the 2015-16 school year.

charter schools with different racial characteristics available to the three racial subgroups. Federally subsidized meals (as indicated by FRPL offered) are most likely to be provided in the highest minority schools available to each racial subgroup. At the same time, subsidized lunches are also provided in more than a third of the available schools with minority shares below 40 percent. Although a charter school that offers subsidized meals would also be providing lunch, not all schools that provide lunch offer subsidized meals lunch. As a result, the distribution of schools offering lunch is less skewed toward the high minority schools than are those offering subsidized lunches.

With respect to transportation services, bus service is very highly skewed toward high minority schools, which is in sharp contrast to organized carpools that are more likely to be offered in charters with low proportions of minorities. The table shows that 80 percent of the aggregate charter school choices available to minority switchers at the elementary level and more than 70 percent at the middle school level that offer busing are in schools that are more than 60 percent minority. Moreover, virtually all the schools with more than 80 percent minority students that offer bus transportation also provide subsidized lunch (not shown). This skewed distribution makes it difficult for us to distinguish revealed preferences for bus transportation from the racial mix of a school's students (see section 7 below).

Charter school missions. Some people support charter schools on the ground that they provide more educational options for parents. One question is the extent to which parents value the specific curricula or options that are offered relative to more generic offerings. Another is whether preferences, as revealed by the choices families make, differ by racial group. A third is the extent to which particular missions are unique to specific types of schools defined by the racial mix of their students. Based on a review of charter school mission statements and other

information such as parent handbooks available on school websites, we developed the following distinct categories of charters.[16] For each category, we report the average percent of minority students in such schools. Those shares are lowest in the schools we identified as having an innovative philosophy and highest in the schools identified as serving disadvantaged students.

- **Generic** These schools do not differentiate themselves in any specific way. (Minority share: 50.7% in elementary, 44.9% in middle)
- **Innovative philosophy**. A school employs an unusual method and approach in delivering its curriculum, which may or may not have a unique focus. Examples include project-based learning, multi-sensory approaches, experiential or hands-on learning and inquiry-based instruction. (Minority share: 33.6% in elementary, 36.5% in middle)
- **Innovative curriculum.** Schools that integrate visual, performing, or fine arts; have a strong emphasis on athletics: or add an unusual component to their core curriculum. This category is broad and a bit amorphous. (Minority share 42.3% in elementary, 46.4% in middle)
- **STEM.** The school's curriculum is infused with subjects in sciences, technology, engineering and math (STEM). Also includes STEAM (STEM plus art) and E-STEAM (STEAM plus entrepreneurship) (Minority share: 67.1% in elementary, 59.6% in middle)
- **Academically Disadvantaged.** Schools target students from "high risk", low socioeconomic backgrounds; some use a "no excuses" approach, and direct instruction; includes KIPP schools. (Minority share: 85.3 % in elementary, 81.5% in middle).

[16] For charter schools in which a mission statement alone did not provide information on the specific approach pursued by the charter school, we consulted the entire website and additional Handbook sections. When we could not find any specific angle, we assigned the charter to the generic category. We have put the charters in non-overlapping categories. The academically disadvantaged category, however includes some schools that may fit both that category and one of the other categories..

7. Revealed preferences by race and SES of the switchers

Although members of our racial groups may value some characteristics equally, we separate the three types of switchers because of our interest in inferring parental preferences related to the racial mix of students in a charter school, preferences that are likely to differ based on the race of the family. We describe results for all the variables based on the full models, with the racial groups of switchers further subdivided by economic disadvantage. All the estimated coefficients we report in tables 8 (for elementary schools) and 9 (for middle schools) come from models of the form of equation 1 above. We report them in the form of odds-ratios so that values above 1 are interpreted as characteristics that are valued more highly than the base category and values below 1 as characteristics that are less valued than the base category. [17]

At the bottom of each table we report three key variables related to sample sizes for each model. N indicates the total number of charter school choices within the relevant choice sets. As we have noted above, this number, which is the sum of all the charters within each of the student-level choice sets, counts most charter schools many times because individual charter schools appear in the choice sets of many switchers. The number of groups refers to the number of traditional public schools the switchers come from and the number of observed choices is the number of switchers in the relevant category, or the total number of choices made. The smaller is

17 One disadvantage of presenting results in this intuitive manner is that one cannot directly determine statistical significance by comparing the reported odds ratio to the reported standard error in parentheses below the odds ratio because the standard errors refer to the estimates from the underlying log of the odds equation. For that reason, the reader should rely on the asterisks to determine whether the underlying estimate from which the odds ratio is calculated is statistically significant. Nonetheless, the standard errors still provide information about the relative variability of estimates from different models.

the number of switchers within a particular group relative to the number of groups the larger are likely to be the standard errors, and hence, the less precise the estimates.

Revealed preferences: elementary school choices

Table 8 provides detailed findings based on the full models for switchers to elementary schools. The first set of 3 columns refer to all switchers, with separate models for each of three racial groups. Columns 4-6 refers to economically disadvantaged switchers and columns 7-9 to economically advantaged switchers, labeled low SES and high SES., respectively, within each racial group. [18] The switchers in the two economic groups do not sum to the total number of switchers by racial category for elementary switchers because SES data are available only for switchers into grades 4 and 5. We note that the very small number of low-SES white switchers in column 6 makes it difficult to identify statistically significant effects for that group. Of interest is how the revealed preferences of the various groups of switchers differ both with respect to the racial mix of students in the charter school and the various other charter characteristics. We organize the following discussion by category of charter school characteristic.

Share of minority students. The estimates reported for the full sample in columns 1-3 reveal the pressures for racially imbalanced charter schools, controlling for the other charter school characteristics. In particular, the patterns for white switchers (column 3) show a statistically significant preference (as indicated by odds ratios above 1) for charters with low percentages of nonwhite students (the top two categories in the table) and a strong aversion (as indicated by odds ratios below 1) to charters with high proportions of non-white students (the

18 The North Carolina Education Research Data Center has specifically requested that these categories be labeled economically disadvantaged or not, rather than the more common terms of eligibility or not for subsidized school meals. We use the term low SES as a shorthand for economically disadvantaged.

lower two categories in the table). In contrast, the revealed preferences of minority switchers and the subset of black switchers tell the reverse story: a strong preference, especially among black switchers, for highly nonwhite charters and an aversion to those with low percentages of nonwhite students. The patterns of the coefficients in columns 4-9 for the SES subgroups related to the racial mix of students follow the same patterns but many are not statistically significant, perhaps because of the smaller sample sizes. The differing patterns of revealed preferences across the racial groups have an important policy implication, namely that they make it difficult, if not impossible, to provide and maintain racially mixed charter schools. Once a charter school is largely white or largely minority, it is not likely to be attractive to the other group.

School academic performance levels. The preferences of elementary school switchers over schools defined by their performance levels (controlling for the other variables in the model) is less clear than over the racial mix of a school's students. No statistically significant differences emerge in column 1 for minority students although black switchers are marginally less likely to choose high performing charters (column 2) and white switchers are marginally less likely to choose low performing schools (column 3) relative to schools with average performance. The patterns are clearer, however, for the SES subgroups for minorities and blacks as shown in columns 4 and 5 and 7 and 8. The statistically significant odds ratios below one for charter schools with both below and above average performance columns reveal that both low and high SES minority and black switchers are most likely to choose elementary schools exhibiting average performance. Recall that the SES subgroups refer to students entering charter schools in grades 4 -5 grades, when school performance may be quite salient. Despite this greater salience, both the low and the high SES white switchers (columns 6 and 9) reveal no clear preference for one performance level over another. We conclude from the patterns for all

three racial groups that parents who are switching to charter schools are far more concerned about other factors, including, but not limited to the racial mix of the school's students, than they are about academic performance levels.

Services offered. Included among these other factors are the lunch and transportation services offered by the charter schools. The evidence clearly indicates that minority and black subgroups of switchers value the availability of federal subsidized free or reduced price meals and, not surprisingly, that is especially true for low SES members of those racial groups. In most cases, these groups are indifferent between the availability of unsubsidized lunches and no lunch (as indicated by the generally insignificant coefficients on the "lunch available" variable), but exhibit a clear preference for subsidized lunch (as indicated by statistically significant coefficients above 1 on the FRPL offered variable). Low-SES minority or black switchers, for example, are more than twice as likely to choose charter schools that offer subsidized lunches than those that do not, all other factors held constant (columns 4 and 5). In contrast, we find no evidence that subsidized lunches matter for white switchers.

We had initially expected to find that charter school switchers, especially low SES switchers, would positively value the availability of bus transportation. The patterns, however, are not consistent with that hypothesis in that none of the coefficients of the "bus offered" variable is statistically significant. The explanation appears to be the difficulty of separating the provision of bus transportation from other characteristics of the school. As we noted earlier, within the choice sets of minority switchers (and also the subset of black switchers) at the elementary level more than 80 percent of the schools offering bus transportation are those with high or very high shares of minority students. Further a high correlation between the

availability of bus transportation and the provision of subsidized lunch compounds the challenge of separating preferences.

The greater variation across school types in the promotion of carpooling arrangements allow us to sort out a few patterns. The main findings are that minority and black switchers tend to shy away from such schools (see odds ratios of about 0.7 for such switchers in the full sample and about 0.5 to 0.6 in the low SES elementary sample) while white switchers as a group are indifferent between no transportation or the carpooling option. White high SES switchers seem to disfavor the carpooling option.

School Missions. One of the avowed purposes of charter schools is to promote innovation and to expand the set of pedagogical and educational options available to parents. The inclusion of school missions in the conditional logic model permits us to determine the extent to which parents value various types of options relative to a more generic school.

Columns 1 and 3 indicate that both minority and white switchers tend to avoid schools with innovative philosophies (as indicated by statistically significant coefficients less than one) and tend to prefer schools offering an innovative curriculum. Only the subgroup of low SES black choosers (column 8), shows any hint of preferring schools with an innovative philosophy, but even that coefficient is not significant. The clearest pattern of differences in preferences by race emerges for the schools that advertise themselves as serving disadvantaged students. While minorities and blacks are more likely to choose these schools over a generic school, white switchers are far less likely to choose them, a pattern that is true for the full samples in columns 1-3 and the SES subgroups in the other 6 columns. Finally, switchers of all races, seem to prefer

charter schools with a STEM orientation, although the results for the SES subsamples are less clear and not statistically significant. [19]

Proximity and school size. Not surprisingly we find that proximity is highly valued by all groups of choosers. The base category for the distance variables is charter schools within 5-10 miles of the switcher's traditional school. As indicated by odds ratios far greater than one for the closest schools, switchers in all racial and SES groups prefer charters within 5 miles to those within 5-10 miles. The declining odds ratios below 1 for the more distant charter indicate that the odds of choosing more distant charters decline with distance. Finally, switchers are more likely to choose larger charter schools, presumably primarily because they have more openings.

Revealed preferences: middle school switchers

Table 9 reports comparable results for the switchers into middle school grade. The set up is identical to that for the elementary school switchers. .

Once again the racial mix of students in the charters appear to matter in ways that contribute to racially segregated charter schools, but with a few differences from the elementary level. Although white middle school choosers, like their elementary school counterparts, are still most likely to choose charters with low proportions of minorities, at this level they are twice as likely to end up in a middle school with 60-80 percent minority students as they are with one that has 40-60 percent. Nonetheless, as at the elementary level, white choosers still have a strong aversion to charters that are more than 80 percent minority. In addition, while at this level, minority choosers as a group have no clear preference for schools with more than 80 percent

[19]Presumably that apparent inconsistency simply reflects the fact that the SES subsamples at the elementary level exclude switchers in the early grades.

minority students, among that group, black choosers still prefer the most highly segregated charters.

This tendency of black middle school switchers to choose heavily minority schools is reinforced by their strong preference for schools that offer subsidized lunch, and those that offer an innovative philosophy or are oriented toward disadvantaged students. The fact that none of these characteristics are strongly valued by white switchers at the middle school level means that charter middle schools can contribute to racial isolation by their decisions about which services and programs their operators choose to offer.

In contrast to the role of services and programs, but relatively similar to the patterns for elementary school switchers, student performance levels at the middle school level do not contribute much to racial isolation. Minority students as a group, as well are the smaller group of black choosers, are both less likely to choose charters with either lower or higher percentages of students at grade level, implying that they are most likely to choose charters with grade level performance in the 40-60 percent range of range. A quite similar pattern appears for white students. Once again, as was true for elementary school choices, the quest for high performing schools does not appear to be a driving form in charter school choices.

Summary of basic patterns.

The patterns shown in Tables 8 and 9 indicate that racial and economic subgroups of parents have differing preferences for charter school characteristics. One possible interpretation of these findings is that charter schools serve a useful purpose in that their flexibility allows them to tailor their academic offerings and the services they offer to meet the desires of different groups of parents. That interpretation works best for the low SES black switchers, many of

whom appear to value access to schools with an innovative philosophy and attention to disadvantaged students. An alternative interpretation, however, leads to a more critical view of charter schools. This view emerges from the following three findings. One is that parents place a high value on the racial mix of students in a school, which means that charters will inevitably end up being racially imbalanced given that the minority and white groups have differing patterns of preferences. Another is that the differing values that groups place on the availability of subsidized lunch and different program characteristics exacerbates the segregating effects of charter schools. The fact that such programs are at the will of the charter operator means that charter schools can make themselves more or less attractive to disadvantaged students by their decision about what service to provide. Third, while innovative philosophies and curricula may be valued by some parents, the evidence suggests that they are not overwhelmingly preferred to a more generic model of schooling even by those who have chosen to shift their children to charter schools.

9. Discussion and Conclusion

One of the significant policy concerns about the growth of charter schools is that they will contribute to the racial segregation of schools. Using data on switchers from traditional public to charter schools in 2015-16 in North Carolina, we first investigate this issue by comparing the racial mix of the chosen charter schools to those of the schools that choosers left behind, separately for three groups -- all minority switchers, the subgroup of black switchers, and white switchers. The findings are clear. Charters in North Carolina do increase racial segregation and it is largely the choices of the white switchers, not the minority switchers that generate that outcome.

We then examine the pressures for charter schools themselves to be racially imbalanced. To that end, we estimate conditional logic models of the revealed preferences of North Carolina parents who switched their children from traditional public schools to charter schools for the 2015-16 school year, given that they had decided to opt out of a traditional public school. We focus attention on the value that different racial groups of choosers place on the racial mix of a charter school's students, while also shedding light on the value that they place on the academic performance of the school, on services such as the availability of a subsidized lunch, and the school's mission.

We conclude that parents clearly care about the racial mix of students in the charter schools they choose. Such a finding is not surprising in light of extensive prior research, some of which we highlighted in section 2, showing that parents care about a school's demographic characteristics. Our findings indicate that white parents appear to have strong preferences for disproportionately white charter schools and a strong aversion to predominately minority charter schools. Minority parents, in contrast, prefer schools with large minority shares, though not necessarily higher shares than in the traditional public schools they left behind. These differential preferences generate strong pressures for charter schools in North Carolina to end up racially imbalanced, with many charters serving mainly white students and other serving mainly minority students, which is observably the case. The implications for such racial isolation for outcomes such as student achievement is beyond the scope of this paper (but see Ladd et all, 2017 for some evidence on that issue based on North Carolina charters, and Reardon (2017) for achievement differences by racial and economic segregation at the national level.) Regardless of their impacts on achievement, however, a significant reason for concern about racially imbalanced

schools is their undesirable social implications for the ability of white and minority children to learn to work and live together.

Although it may be tempting to attribute the patterns we describe here exclusively to racial prejudice -- on the part of both white and minority parents -- our findings shed no direct light on the motivations behind the preferences that their choices reveal. The patterns we observe may partly reflect a not-unreasonable desire of parents to enroll their children in schools with children that are similar to themselves in characteristics other than race, or the desire of children to go to school with their friends. In particular, we cannot rule out the possibility that what appears to be racial preferences in this study could still be confounded to some extent by preferences related to the economic characteristics of a school's students or to other school characteristics that we have not measured. None of those other variables, however, is likely to negate the basic conclusion of this study, namely that, whatever their motivations might be, white and minority choosers have asymmetric preference with respect to the racial mix of charter schools, with the outcome inevitably being racially imbalanced charter schools.

In light of the patterns documented in this study, we believe policy makers have a special responsibility to design publicly funded choice programs, including but not limited to charter schools, in ways that would mitigate their contribution to the socially undesirable outcome of racially imbalanced schools. This study provides evidence about the importance of one policy that would be a start in that direction, namely requiring charter schools to provide federally subsidized lunches. Regardless of how desirable such policies may be, however, by themselves they are not likely to offset the strong pressures for racial isolation that arise with charter schools. As long as policy makers are unwilling to require that individual charter schools be racially balanced, charters are likely to increase racial isolation within schools.

References

Abdulkadiroglu, A., Pathak, P. A., Schellenberg, J., & Walters, C. R. (2017, October). Do Parents Value School Effectiveness. *NBER Working Paper Series*.

Adzima, K. (2014). Parental Valuation of PennsylvaniaThe Factors Influencing Charter Schools in Grades 3-6. *Journal of School Choice, 8*(2), 159-191.

Armor, D. J., & Peiser, B. M. (1998). Interdistrict Choice in Massachusetts. In P. Peterson, & B. Hassel (Eds.), *Learning from School Choice.* Washington, D.C.: Brookings Institution Press.

Bifulco, R., & Ladd, H. F. (2007). School choice, racial segregation, and test-score gaps: Evidence from North Carolina's charter school program. *Journal of Policy Analysis and Management, 26*(1), 31-56.

Booker, K., Zimmer, R., & Buddin, R. (2005). The Effects of Charter Schools on School Peer Composition. *RAND Working Paper*, 28.

Burgess, S., Greaves, E., Vignoles, A., & Wilson, D. (2015). What Parents Want: School Preferences and School Choice. *The Economic Journal, 125*(587), 1262-1289.

Butler, J., Carr, D. A., Toma, E. F., & Zimmer, R. (2013). Choice in a World of New School Types. *Journal of Policy Analysis and Management, 32*(4), 785-806.

Cowen, J. M., & Creed, B. (2017). Public School Choice and Student Achievement: Evidence From Michigan's Interdistrict Open Enrollment System. *AERA Open*, 1-12.

Egalite, A. J., Mills, J. N., & Wolf, P. J. (2017). The Impact of Targeted School Vouchers on Racial Stratification in Louisiana Schools. *Education and Urban Society, 49*(3), 271-296.

Garcia, D. R. (2008). The Impact of School Choice on Racial Segregation in Charter Schools. *Educational Policy, 22*(6), 805-829.

Glazerman, S., & Dotter, D. (2017). Market Signals: Evidence on the Determinants and Consequenses of School Choice from Citywide Lottery. *Educational Evaluation and Policy Analysis, 39*(4), 593–619.

Greene, J. P., Howell, W. G., & Peterson, P. C. (1998). Lessons from the Cleveland Scholarship Program. In P. Peterson, & B. Hassel (Eds.), *Learning from School Choice.* Washington, D.C.: Brookings Institute Press.

Harris, D. N., & Larsen, M. (2014). *What Schools Do Families Want (And Why)? School Demand and Information Before and After the New Orleans Post-Katrina School Reforms.* new Orleans: Education Research Alliance ofr New Orleans.

Hastings, J. , Kane , T.. &Staiger, D. 2009. Heterogeious Preferences and the Efficacy of Public School Choice. Working paper.

.Kelly, J. P., & Scafidi, B. (2013). *More Than Scores. An Analysis of Why and How Parents Choose Private School.* The Friedman Foundation ofr Education Choice.

Kleitz, B., Weiher, G. R., Tedin, K., & Matland, R. (2000). Choice, Charter Schools, and Household Preferences. *Social Science Quarterly, 81*(3), 846-854.

Koedel, C., Betts, J. R., Rice, L. A., & Zau, A. C. (2009). The Integrating and Segregating Effects of School Choice. *Peabody Journal of Education, 84*, 110-129.

Ladd, H. F., Clotfelter, C. T., & Holbein, J. B. (2017). The Growing Segmentation of the Charter School Sector in North Carolina. *Education, Finance and Policy, 12*(4), 536-563.

Lincove, J. A., Cowen, J. M., & Imbrogno, J. P. (2018). *What's in Your Portfolio? How Parents Rank Traditional Public, Private, and Charter School in Post-Katrina New Orleans' Citiwide System of School Choice.* New Orleans: Association for Education Finance and Policy.

McFadden, D. (1974). The Measurement of Urban Travel Demand. *Journal of Public Economics, 3*, 303-328.

Monarrez, T. Kisida, B., Chingos, M. (2019). Charter School Effects on School Segregration. Urban Insititute Research Report (July).

Reardon, S. F. (2016). School Segregation and Racial Academic Achievement Gaps. *Journal of the Social Sciences, 2*(5), 34-57.

Reback, R. (2008). Demand (and Supply) in an Inter-District Public School Choice Program. *Economics of Education Review, 27*(4), 402-416.

Renzulli, L. A., & Evans, L. (2005). School Choice, Charter Schools, and White Flight. *Social Problems, 52*(3), 398-418.

Ritter, G. W., Jensen, N. C., Kisida, B., & Bowen, D. H. (2016). Urban School Choice and Integration: The Effect of Charter Schools in Little Rock. *Education and Urban Society, 48*(6), 535-555.

Schneider, M., & Buckley, J. (2002). What Do Parents Want from Schools? Evidence from the Internet. *Educational Evaluation and Policy Analysis, 24*(2), 133-144.

Stein, M., Goldring, E., & Cravens, X. (2010, August). Choosing Indianapolis Charter Schools: Espoused Versus Revealed Academic Preferences. National Center on School Choice .

Villavicencio, A. (2013). “It’s Our Best Choice Right Now”:Exploring How Charter School Parents Choose. *Educational Policy Analysis Archives, 21*(81).

Weiher, G. R., & Tedin, K. L. (2001). Does choice lead to racially distinctive schools? Charter schools and household preferences. *Journal of Policy Analysis and Management, 21*(1), 79-92.

Weixler, L. B., Barrett, N. H., & Jennings, J. (2017). *Changes in New Orleans School Segregation After Hurricane Katrina.* Education Research Alliance for New Orleans.

Zeehandelaar, D., & Winkler, A. M. (2013). *What Parents Want: Education Preferences and Trade-offs. A National Survey of K-12 Parents.* Thomas B. Fordham Institute.

Zimmer, R., Gill, B., Booker, K., Lavertu, S., Sas, T. R., & Witte, J. (2009). Charter Schools in Eight States: Effects on Achievement, Attainment, Integration, and Competition. *RAND*.

Table 1: Characteristics of the switchers and non-switchers by grade

source: sc-mt-sa02-V01

A. Elementary school grades

Kindergarten

	Switcher	Remain in TPS
N	532	22,240

1st grade

	Switcher	Remain in TPS
N	1,335	108,391

2nd grade

	Switcher	Remain in TPS
N	1,354	110,071

3rd grade

	Switcher	Remain in TPS
N	1,441	109,646

4th grade

	Switcher	Remain in TPS
Reading (lag)	0.0063	-0.0017
Math (lag)	-0.0517	0.0030
Days absent	4.75	4.79
N	1,435	106,740

5th grade

	Switcher	Remain in TPS
Reading (lag)	-0.0166	-0.0040
Math (lag)	-0.0389	0.0089
Days absent	4.80	4.77
N	1,535	104,589

Total	7,632	561,677

B. Middle school grades

6th grade

	Switcher	Remain in TPS
Reading (lag)	0.0551	-0.0119
Math (lag)	0.0220	0.0015
Days absent	5.12	4.92
N	2,143	96,373

7th grade

	Switcher	Remain in TPS
Reading (lag)	-0.1526	-0.0172
Math (lag)	-0.1876	-0.0077
Days absent	7.00	5.67
N	1,043	105,765

8th grade

	Switcher	Remain in TPS
Reading (lag)	0.0513	-0.0078
Math (lag)	-0.1115	0.0021
Days absent	7.29	6.04
N	976	106,758

Total	4,162	308,896

Table 2: Distribution of moves by difference in percent minority (percent of switchers)

source: sc-mt-sa02-V01

	Elementary			Middle		
	Minority	Black	White	Minority	Black	White
Difference in percent minority						
Much higher minority	10.2	12.2	4.5	10.4	11.9	3.6
Higher minority	18.6	20.0	10.7	18.2	20.9	9.7
Same share (base)	30.1	31.1	17.8	29.0	29.3	14.6
Lower minority	26.0	23.9	35.8	19.2	15.9	43.0
Much lower minority	15.1	12.8	31.2	23.2	22.0	29.1
Percent of switchers	100	100	100	100	100	100
Total number of switchers	2,979	2,024	1,911	1,447	960	1,236

Source: North Carolina Education Research Data Center

* All the differences refer to percentage point differences in percent nonwhite between charter and traditional public schools. Whenever the difference is negative - TPS has higher percentage of minoirty students

Much higher minority - percentage point difference is greater than 25 percentage points
Higher minority - percentage point difference is between 5 and 25 percentage points
Same level - percentage point difference is within ± 5 percentage points
Lower minority - percentage point difference is between -5 to -25 percentage points
Much lower minority - percentage point difference is less -25 percentage points

Table 3: Estimated choices of switchers with limited controls

source: sc-mt-sa06-V02

	Elementary School			Middle School		
	Minority	**Black**	**White**	**Minority**	**Black**	**White**
	(1)	(2)	(3)	(1)	(2)	(3)
Difference in share of minority students						
Much higher minority	0.639***	1.192	0.125***	0.759*	1.227	0.177***
	(0.067)	(0.154)	(0.020)	(0.111)	(0.223)	(0.034)
Higher minority	0.640***	0.666***	0.566***	0.697***	0.843	0.631***
	(0.054)	(0.067)	(0.069)	(0.085)	(0.123)	(0.098)
Same share (base)	1	1	1	1	1	1
	-	-	-	-	-	-
Lower minoirty	0.728***	0.613***	1.334***	0.611***	0.581***	1.956***
	(0.054)	(0.054)	(0.142)	(0.071)	(0.083)	(0.265)
Much lower minority	0.119***	0.092***	1.949***	0.230***	0.216***	2.280***
	(0.009)	(0.009)	(0.244)	(0.024)	(0.027)	(0.355)
N	50,551	32,559	28,761	20,759	14,150	15,215
N of groups	597	463	535	519	371	486
N of observed choices	2979	2024	1911	1447	960	1236
Pseudo R^2	0.242	0.242	0.315	0.256	0.241	0.306

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The model includes the listed variables plus controls for distance and log of enrollments (coef. not shown here. Reported coefficients are odds ratios.)

Table 4: Distribution of available options and actual choices by racial mix of the charter schools

source: sc-mt-sa02-V01

	Elementary			Middle		
Panel A	Minority	Black	White	Minority	Black	White
Percent minority						
0 to 20 %	22.0	20.7	25.0	19.5	18.2	27.4
20 to 40 %	24.2	25.3	25.2	29.1	29.8	27.0
40 to 60 %	12.2	12.3	11.7	16.7	17.4	14.2
60 to 80 %	8.5	8.7	7.9	4.2	3.9	4.9
80 to 100 %	33.1	33.0	30.1	30.5	30.8	26.5
Total percent	100	100	100	100	100	100
Aggregate number of choices	51,396	33,274	31,502	21,701	14,665	16,715

	Elementary			Middle		
Panel B	Minority	Black	White	Minority	Black	White
Percent Minority						
0 to 20 %	7.6	3.6	40.2	9.9	4.5	48.6
20 to 40 %	10.8	8.6	38.7	13.6	12.5	32.4
40 to 60 %	9.0	5.5	11.5	13.3	11.8	13.0
60 to 80 %	15.7	17.0	5.9	12.2	12.6	4.3
80 to 100 %	57.0	65.3	3.8	51.1	58.7	1.6
Total percent	100	100	100	100	100	100
Total number of switchers	2,979	2,024	1,911	1,447	960	1,236

Source: North Carolina Education Research Data Center

Table 5: Average distances for switchers

Source: sc-mt-sa02-V01

	Elementary			Middle		
Average distance (in miles)	Minority	Black	White	Minority	Black	White
To the chosen charter	5.7	6.0	6.5	5.5	5.8	6.9
To the nearest charter	3.5	3.5	4.5	3.2	3.2	4.6
To the second nearest charter	5.0	5.1	5.8	5.0	4.9	6.3
To the farthest charter	16.9	16.6	17.8	17.8	17.7	18.0

Table 6: Distribution of available options and actual choices by performance of the carter schools

source: sc-mt-sa02-V01

	Elementary			Middle		
Panel A	Minority	Black	White	Minority	Black	White
Performance at or above grade level						
0 to 40 %	22.8	22.6	20.9	17.5	17.3	15.1
40 to 60 %	17.2	17.9	17.8	20.3	20.7	19.2
60 to 100 %	60.0	59.5	61.3	62.3	62.0	66.7
Total percent	100	100	100	100	100	101
Aggregate number of choices	50,264	32,441	30,747	21,678	14,653	16,689

	Elementary			Middle		
Panel B	Minority	Black	White	Minority	Black	White
Performance at or above grade level						
0 to 40 %	25.8	28.8	2.3	19.1	20.4	1.9
40 to 60 %	30.7	31.6	16.5	34.9	38.7	17.5
60 to 100 %	43.5	39.6	81.2	46.0	40.9	80.7
Total percent	100	100	100	100	100	100
Total number of switchers	2,932	1,986	1,888	1,447	960	1,236

Source: North Carolina Education Research Data Center

Table 7: Distribution of available charter options by services provided

source: sc-mt-sa02-V01

	Elementary			Middle		
Bus Service Offered	Minority	Black	White	Minority	Black	White
Percent Minority						
0 - 20 %	10.3	9.1	15.4	15.4	14.4	25.8
20 - 40 %	8.5	9.0	10.9	12.2	12.4	10.4
40 - 60 %	1.0	0.8	2.8	1.6	1.4	3.8
60 - 80 %	13.8	13.7	12.4	5.3	4.7	6.2
80 - 100 %	66.4	67.4	58.6	65.5	67.0	53.9
Total percent	100	100	100	100	100	100
Aggregate number of choices	13,197	8,696	8,418	5,950	4,082	4,608

	Elementary			Middle		
Carpool Service Offered	Minority	Black	White	Minority	Black	White
Percent Minority						
0 - 20 %	29.7	26.9	28.5	27.4	25.5	33.9
20 - 40 %	38.1	41.6	40.7	38.4	40.2	34.7
40 - 60 %	16.8	18.2	17.3	20.7	22.2	17.1
60 - 80 %	6.0	5.3	5.2	4.6	4.2	5.2
80 - 100 %	9.5	8.0	8.4	8.9	8.0	9.1
Total percent	100	100	100	100	100	100
Aggregate number of choices	16,259	10,174	9,519	6,858	4,629	5,087

	Elementary			Middle		
FRPL Offered	Minority	Black	White	Minority	Black	White
Percent minority						
0 - 20 %	10.1	10.4	11.1	8.1	7.8	10.1
20 - 40 %	24.8	24.9	25.4	29.7	30.0	29.9
40 - 60 %	8.0	8.0	8.7	9.6	9.9	9.2
60 - 80 %	9.1	9.4	9.3	5.2	5.0	6.5
80 - 100 %	48.1	47.3	45.5	47.4	47.4	44.4
Total percent	100	100	100	100	100	100
Aggregate number of choices	26,125	16,896	15,386	10,848	7,348	8,180

	Elementary			Middle		
Lunch Available*	Minority	Black	White	Minority	Black	White
Percent Minority						
0 - 20 %	19.9	19.5	22.1	17.2	16.4	22.1
20 - 40 %	26.4	27.2	27.6	30.2	31.0	28.9
40 - 60 %	11.1	11.1	10.7	15.6	16.1	13.4
60 - 80 %	8.0	7.8	7.4	4.7	4.3	5.8
80 - 100 %	34.6	34.3	32.3	32.2	32.3	29.8
Total percent	100	100	100	100	100	100
Aggregate # of choices	39,448	25,659	23,713	17,848	12,187	13,329

Source: North Carolina Education Research Data Center

* FRPL and Lunch Available are NON-EXCLUSIVE categories

Table 8: Elementary school switchers: Revealed preferences by racial and SES subgroups

source: sc-mt-sa07-V01

	All SES Levels			Low SES			High SES		
	Minority (1)	Black (2)	White (3)	Minority (4)	Black (5)	White (6)	Minority (7)	Black (8)	White (9)
Share of Minority Students									
0 to 20%	0.426***	0.370***	1.819***	0.380***	0.298***	1.244	0.362***	0.345***	1.526***
	(0.052)	(0.069)	(0.212)	(0.105)	(0.117)	(0.551)	(0.068)	(0.099)	(0.237)
20 to 40%	0.475***	0.787	2.212***	0.433***	0.623	1.914	0.483***	0.800	2.052***
	(0.051)	(0.119)	(0.260)	(0.109)	(0.207)	(0.886)	(0.078)	(0.180)	(0.324)
40 to 60% (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
60 to 80%	2.233***	4.793***	0.548***	2.865***	6.118***	1.319	1.254	2.801***	0.454***
	(0.275)	(0.793)	(0.111)	(0.774)	(2.105)	(0.988)	(0.256)	(0.759)	(0.131)
80 to 100%	1.525***	3.500***	0.135***	2.177***	3.967***	0.389	0.887	2.339***	0.179***
	(0.169)	(0.522)	(0.032)	(0.512)	(1.222)	(0.306)	(0.162)	(0.572)	(0.056)
Average Performance									
0 to 40%	0.993	1.000	0.630**	0.508***	0.544***	0.574	0.952	0.936	0.541*
	(0.073)	(0.086)	(0.147)	(0.068)	(0.084)	(0.434)	(0.128)	(0.147)	(0.176)
40 to 60% (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
60 to 100%	0.870	0.758**	0.964	0.662**	0.565***	1.318	0.898	1.024	1.075
	(0.077)	(0.085)	(0.117)	(0.116)	(0.121)	(0.530)	(0.133)	(0.196)	(0.182)
Transportation Options									
No option (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
Bus offered	1.050	1.002	1.040	0.939	0.813	1.458	1.141	1.057	0.920
	(0.074)	(0.092)	(0.104)	(0.138)	(0.151)	(0.509)	(0.141)	(0.168)	(0.127)
Carpooling Organized	0.699***	0.744***	0.914	0.549***	0.624**	0.625	0.984	0.910	1.182
	(0.055)	(0.077)	(0.075)	(0.096)	(0.136)	(0.217)	(0.123)	(0.153)	(0.130)
Lunch Options									
Bring own (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
Lunch Available	0.990	1.446**	0.993	0.905	0.871	0.998	1.335*	2.689***	0.923
	(0.104)	(0.222)	(0.095)	(0.222)	(0.306)	(0.374)	(0.226)	(0.664)	(0.120)
Subsidized	1.564***	1.269**	0.944	2.314***	2.459***	0.860	1.395***	0.913	1.019
	(0.129)	(0.149)	(0.079)	(0.437)	(0.685)	(0.317)	(0.180)	(0.162)	(0.115)
School Mission									
Generic (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
Innovative Philosophy	0.790**	1.153	0.619***	0.849	1.280	0.896	0.564***	0.841	0.418***
	(0.073)	(0.140)	(0.057)	(0.175)	(0.336)	(0.351)	(0.086)	(0.167)	(0.051)
Innovative Curriculum	1.476***	0.961	1.230*	1.346	0.845	0.788	1.250	0.692*	0.820
	(0.141)	(0.130)	(0.136)	(0.278)	(0.253)	(0.370)	(0.189)	(0.145)	(0.122)
Academically Disadvantaged	1.223**	1.384***	0.477***	1.681***	2.055***	0.215**	0.960	0.986	0.436***
	(0.099)	(0.139)	(0.082)	(0.265)	(0.408)	(0.156)	(0.139)	(0.176)	(0.102)
STEM	1.305**	1.306**	1.669***	1.255	1.265	0.957	1.123	1.026	1.011
	(0.140)	(0.168)	(0.278)	(0.274)	(0.327)	(0.708)	(0.206)	(0.226)	(0.230)
Proximity									
Within 5 miles	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
Between 5 & 10 miles	4.033***	3.124***	4.163***	3.600***	2.872***	5.396***	3.806***	3.432***	3.876***
	(0.249)	(0.238)	(0.330)	(0.454)	(0.427)	(1.783)	(0.383)	(0.435)	(0.405)
Between 10 & 15 miles	0.257***	0.304***	0.182***	0.309***	0.298***	0.190***	0.209***	0.292***	0.164***
	(0.022)	(0.031)	(0.018)	(0.053)	(0.061)	(0.077)	(0.031)	(0.051)	(0.022)
Beyond 15 miles	0.049***	0.049***	0.027***	0.057***	0.062***	0.046***	0.036***	0.043***	0.020***
	(0.007)	(0.009)	(0.004)	(0.016)	(0.020)	(0.024)	(0.010)	(0.015)	(0.005)
Size of Charter									
Log of Enrollment	2.192***	2.212***	1.606***	1.813***	1.776***	1.957***	2.043***	1.874***	1.638***
	(0.111)	(0.137)	(0.103)	(0.165)	(0.190)	(0.438)	(0.178)	(0.202)	(0.146)
N	48,485	31,273	27,575	12,052	8,053	1,280	15,738	9,954	14,574
N of groups	569	442	518	304	240	109	377	278	371
N of observed choices	2880	1962	1888	816	614	149	940	614	985
Pseudo R^2	0.251	0.265	0.330	0.306	0.323	0.411	0.260	0.264	0.351

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9: Middle school switchers: Revealed preferences by racial and SES subgroups

source: sc-mt-sa07-V01

	All SES Levels			Low SES			High SES		
	Minority (1)	Black (2)	White (3)	Minority (4)	Black (5)	White (6)	Minority (7)	Black (8)	White (9)
Share of Minority Students									
0 to 20%	0.750*	0.475***	3.003***	0.705	0.270***	3.154***	0.856	0.879	2.714***
	(0.125)	(0.118)	(0.450)	(0.165)	(0.098)	(0.908)	(0.201)	(0.305)	(0.475)
20 to 40%	0.611***	0.792	2.932***	0.605**	0.790	1.573	0.637**	0.798	3.205***
	(0.088)	(0.148)	(0.453)	(0.126)	(0.202)	(0.505)	(0.127)	(0.219)	(0.569)
40 to 60% (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
60 to 80%	5.539***	8.619***	2.122***	6.829***	9.655***	2.748**	4.094***	6.381***	1.506
	(1.022)	(2.035)	(0.550)	(1.722)	(2.968)	(1.403)	(1.156)	(2.450)	(0.474)
80 to 100%	1.203	2.018***	0.068***	1.904***	2.645***	0.058***	0.689	1.328	0.063***
	(0.181)	(0.391)	(0.022)	(0.391)	(0.672)	(0.031)	(0.161)	(0.410)	(0.027)
Average Performance									
0 to 40%	0.728***	0.675***	0.798	0.885	0.909	0.508	0.348***	0.253***	0.897
	(0.089)	(0.096)	(0.330)	(0.132)	(0.157)	(0.364)	(0.083)	(0.075)	(0.472)
40 to 60% (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
60 to 100%	0.567***	0.478***	0.579***	0.540***	0.402***	0.272***	0.553***	0.534**	0.800
	(0.072)	(0.075)	(0.096)	(0.091)	(0.083)	(0.085)	(0.109)	(0.132)	(0.159)
Transportation Options									
No option (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
Bus offered	0.868	0.796*	0.816*	0.746**	0.652***	0.828	1.002	1.031	0.861
	(0.086)	(0.100)	(0.098)	(0.096)	(0.105)	(0.186)	(0.154)	(0.219)	(0.122)
Carpooling Organized	0.711***	0.772*	0.535***	0.593***	0.581***	0.595**	0.850	1.082	0.519***
	(0.075)	(0.104)	(0.056)	(0.088)	(0.105)	(0.139)	(0.132)	(0.224)	(0.060)
Lunch Options									
Bring own (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
Lunch Available	1.482**	1.352	2.641***	1.226	1.067	1.794**	1.828**	1.822*	2.733***
	(0.227)	(0.261)	(0.357)	(0.257)	(0.278)	(0.484)	(0.436)	(0.572)	(0.431)
Subsidized	1.752***	1.553***	0.978	1.898***	2.096***	1.606**	1.610***	1.146	0.859
	(0.201)	(0.242)	(0.101)	(0.324)	(0.465)	(0.365)	(0.255)	(0.266)	(0.101)
School Mission									
Generic (base)	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
Innovative Philosophy	1.203	1.544***	0.690***	1.328*	1.636***	0.668*	1.236	1.739**	0.719***
	(0.138)	(0.224)	(0.077)	(0.206)	(0.312)	(0.155)	(0.216)	(0.409)	(0.091)
Innovative Curriculum	0.887	0.613**	0.523***	0.637**	0.494***	0.595	1.349	0.957	0.509***
	(0.131)	(0.122)	(0.087)	(0.135)	(0.134)	(0.241)	(0.291)	(0.296)	(0.094)
Academically Disadvantaged	1.299**	1.606***	0.214***	1.279*	1.531**	0.385**	1.464*	1.894***	0.191***
	(0.147)	(0.220)	(0.047)	(0.179)	(0.256)	(0.154)	(0.290)	(0.469)	(0.050)
STEM	0.492***	0.536***	0.444***	0.481***	0.520***	0.993	0.630	0.738	0.390***
	(0.084)	(0.110)	(0.087)	(0.105)	(0.130)	(0.443)	(0.178)	(0.278)	(0.087)
Proximity									
Within 5 miles	1	1	1	1	1	1	1	1	1
	-	-	-	-	-	-	-	-	-
Between 5 & 10 miles	3.515***	2.789***	3.287***	2.937***	2.468***	2.175***	4.261***	3.382***	3.620***
	(0.279)	(0.267)	(0.325)	(0.299)	(0.295)	(0.440)	(0.542)	(0.546)	(0.411)
Between 10 & 15 miles	0.207***	0.218***	0.195***	0.195***	0.191***	0.241***	0.245***	0.278***	0.183***
	(0.023)	(0.029)	(0.022)	(0.030)	(0.034)	(0.051)	(0.041)	(0.058)	(0.024)
Beyond 15 miles	0.029***	0.039***	0.030***	0.035***	0.038***	0.025***	0.028***	0.052***	0.031***
	(0.006)	(0.009)	(0.005)	(0.009)	(0.012)	(0.010)	(0.009)	(0.018)	(0.006)
Size of Charter									
Log of Enrollment	1.435***	1.446***	0.780***	1.485***	1.612***	1.166	1.420***	1.330*	0.684***
	(0.110)	(0.138)	(0.070)	(0.147)	(0.197)	(0.211)	(0.176)	(0.213)	(0.071)
N	20,440	13,953	14,921	11,945	8,803	2,822	8,101	4,926	11,642
N of groups	507	365	479	374	292	192	320	195	399
N of observed choices	1447	960	1236	882	640	287	565	320	949
Pseudo R^2	0.283	0.284	0.343	0.297	0.319	0.327	0.313	0.289	0.370

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1