Beyond Academics: Do Small Schools have Better Learning Environments?

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Are Learning Environments Better at Small Schools?

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Abstract: Small schools are purported to have better academic outcomes and better learning environment relative to large schools. While recent research has focused on academic performance, little has been devoted to learning environments. In this paper, we aim to begin to fill that gap. We use a unique data set of school and student-level data from NYC public high school students entering 9th grade in 2009/10 to examine the effect of small schools on students' attitudes along three dimensions: interpersonal relationships, academic expectations and support, and social behavior and safety. Then, following recent findings on heterogeneous effects by vintage, we separate small schools into new and old small schools. Briefly, we find that while naïve comparisons indicate students in small schools have better learning environments, after correcting for selection on unobservables using distance as an instrument for type of high school attended, small schools do not matter for any of these outcomes. Contrary to what advocates of school reform advocate, attending a small school in and of itself does not guarantee a better and more supportive learning environment. These results, however, hide an important source of heterogeneity in school effects driven by the school's vintage. In particular, we find that there are marked differences between old small and new small schools as compared to each other and large schools. Students report better interpersonal relationships, social behavior and higher academic expectations in old small schools relative to large schools. Old small schools also provide an environment with more positive interpersonal relationships and social behavior compared to new small schools.

Keywords: small schools, learning environment, school climate, new small and old small schools

I. Introduction

In the last decades nearly every major urban area in the USA has implemented reforms to create new small schools or to transform large schools into smaller ones. This renewed push for small schools has been largely supported by recent evidence showing that smaller schools lead to higher academic achievement: students in small schools learn faster, receive higher test scores and graduate at higher rates than comparable students in larger schools (Schwartz, Stiefel and Wiswall, 2012; Bloom and Unterman, 2012). Much of the expected academic benefits from attending smaller schools is credited to their more personalized and safer learning environments, which in turn, help students feel more motivated and encouraged to succeed academically, either by adults and their peers. Several studies support these claims, concluding that small schools have a better learning environment than large impersonal schools. The existing research, however, is mostly correlational and fails to provide causal evidence supporting this relationship (Leithwood & Jantzi, 2009; Cotton, 1996). To our knowledge, this is the first paper that addresses this question using a more rigorous research design that allows us to explore the validity of the causal claims regarding small schools and learning environments. Based on findings in the literature on academic outcomes, suggesting heterogeneous effects by a school's vintage, we further examine differences between old small and new small.

The feelings and attitudes that are elicited by a school's environment are usually referred to as a school's learning environment or a school's climate.[1] Small school advocates have sought to advance a vision that "smaller is better" beyond academic achievement, arguing for the benefits of more intimate and more individualized schools instead of large comprehensive high schools. Small schools have thus been touted as fostering a greater sense of connectedness and belonging, more positive student social behavior, more and varied extracurricular participation, higher expectations, and better attitudes towards schools and subjects (Leithwood & Jantzi, 2009; Darling-Hammond et al., 2007; Slate and Jones, 2005; Overbay, 2003; Cotton, 1996; Fowler 1995; Stockard and Mayberry, 1992). The evidence supporting the causal relationship between

[1] While the concept of "school climate" has been defined in a wide variety of ways, in the education research literature it generally refers to the quality and character of school life, reflecting "norms, goals, values, interpersonal relationships, teaching, learning and leadership practices, and organizational structures." (National School Climate Center, 2007, p. 5).

school size and a positive learning environment, however, is limited. First, the likelihood of selection bias has not been taken into account and, moreover, much of the advantage of small schools may be accounted for by other other attributes in addition to size (Johnson et al., 2002; Fine & Somerville, 1998; Cotton, 1996). In particular, recent evidence in Chicago and New York has shown that the perceived academic benefits of small schools can be only attributed to the newer small schools (Schwartz, Stiefel and Wiswall, 2012; Bloom et al., 2010; Barrow et al., 2010). In NYC, newly created small schools have become a key component of public education reform and have been the target of an unprecedented private investment and support, particularly by the Bill & Melinda Gates Foundation. These new schools differ from the older small schools in NYC, which mostly opened in the mid-1990s and were part of a more broadly conceptualized reform of which both second-chance and college preparatory schools were a key components (Stiefel et al., 2000). Moreover, the relationship between size and age (or a school's 'vintage') may be more significant for small schools as they are overly dependent on key staff and leadership particularly in the first foundational years. Hence, time may turn out to be more crucial for the survival and stability of a small school as well as for the development of its organizational focus and relationships between parents, teachers and students (Stiefel et al., 2000).

In this paper we examine the effect of attending small high schools on students' school learning environment along three dimensions through which school size is believed to work: interpersonal relationships, academic expectations and support and social behavior and safety (Leithwood & Jantzi, 2009; Cotton, 1996; Stolp & Smith, 1995; Gregory & Smith, 1987; Brookover, Beady, Flood, Schweitzer, & Wisenbaker, 1979). Specifically, we test the following hypotheses:

- Are positive student-teacher relationships, caring relationships and degrees of cooperation among students and teachers higher in small schools?
- Are expectations of success in both academic and behavioral endeavors as well as support to achieve these expectations higher in small schools?
- Are social behavior and feelings of safety better in small schools?

Following recent evidence that shows that small schools' 'newness' is behind most of the positive relationship between small schools and positive academic achievement, we separate small schools into new and old small schools (Schwartz, Stiefel and Wiswall, 2012). We use a

unique data set of school and student-level data of NYC public high school students (entering 9th grade in 2009-10), which combine demographic and student performance data with information from student surveys. Thus, a major contribution of this paper is the comprehensive set of dimensions of the schools' learning environment that we are able to explore. Finally, we rely on the use of instrumental variable estimation to identify a causal link between small schools and the school's learning environment.

Briefly, we find that while naïve comparisons indicate that small schools in general have better learning environments, after correcting estimates for selection on unobservables, school size does not seem to matter. Contrary to claims made by small schools' advocates, a better learning environment is not a natural by-product of small schools. These results, however, hide an important source of heterogeneity in school effects driven by a school's vintage. In particular, our results show that there are marked differences between old small and new small schools: while new small schools do not appear to have a better learning environment relative to large schools, students in old small schools report experiencing better interpersonal relationships, social behavior and higher academic expectations relative to large schools. Moreover, there are significant differences between old and new small schools: students in old small schools are more likely to feel taken care of by other adults and students at their school and student is behavior is better than in new small schools.

The paper is organized as follows. Section 2 provides background on small schools in NYC and discusses the prior literature. The data are described in Section 3 and the empirical methodology discussed in Section 4. Section 5 presents the results, followed by a set of robustness checks. Finally, Section 6 concludes.

II. Background

Reducing school size, advocates contend, offers most of the benefits that largely determine the value of a school to students, faculty and the community. The most recent reviews of the main literature on school size appear to support their claims, concluding in favor of small schools across a wide array of outcomes, including not only academic achievement but also a school's climate and learning environment (Leithwood & Jantzi, 2009; Darling-Hammond et al., 2007; Cotton, 1996). Nonetheless, the empirical evidence linking school size and a school's learning environment, mostly based on either self-reports from teachers or students or available

statistics on the number and levels of different incidents that occur in schools, such as crimes and drug use, is by and large correlational.

A positive learning environment is considered important in its own right and also because of the relationship with students' academic achievement (Pittman and Haughwout, 1987; Bourke, 1993; Mok & Flynn, 1997). Its most salient characteristics include: collaborative relationships among all; high expectations; an environment of respectful and positive interactions; and opportunities for meaningful participation both academically and socially (Bear and Smith, 2009). In this paper we focus on three of the main mechanisms through which school size may affect a school's learning environment, which are the following: i) interpersonal relationships; ii) expectations and support and iii) social behavior and safety.[2]

First, evidence from case studies and from surveys to teachers and students, show that small schools have better interpersonal relationships than large schools. Small schools appear to nurture better student and teacher relationships and foster an environment where students are known and develop strong feelings of belonging to their school (Ferris and West, 2004; Cotton, 1996; Walberg 1992; Stockard and Mayberry 1992; Fowler and Walberg 1991; Edington and Gardner 1984). Moreover, being in a smaller school is associated with feeling that relationships are "more intense and enduring" (Wynne and Walberg, 1995, p. 531).

Second, and in a related vein, small schools are associated with higher academic expectations and support. The higher degree of connectedness in small schools translates into more cooperation among teachers and students than in large schools (Edington and Gardener, 1984). In small schools, teachers also report having a more positive attitude about their responsibility for students' learning, having a positive indirect effect on achievement than in larger schools (Lee and Loeb, 2003). Thus, teachers in small schools appear not only to provide the necessary support to achieve success in both academic and behavioral endeavors but also expect more from their students (Darling-Hammond at al., 2002; Fine, Stoudt, & Futch, 2005;

[2] Most of the studies on the link between school size and school climate and non-academic outcomes are based on evidence from middle schools and high schools (Bloom and Unterman, 2012; Ferris and West, 2004; Ma, X., 2001; Stockard and Mayberry 1992; Leung and Ferris, 2008; Nathan, J. & Thao, K., 2007; Darling-Hammond, Ancess, & Ort, 2002; Brezina, Piquero, and Mazerolle, 2001; Fine, Stoudt, & Futch, 2005; Gottfredson, Payne, and Gottfredson, 2005; Fowler and Walberg 1991; Edington and Gardner 1984; Wasley et al., 2000; Rogers 1987). There are a few which use data from elementary schools (see for example Lee and Loeb, 2000 or Datar and Sturm**,** 2004) or schools with varied grade spans (Bowes et al., 2009; Wasley et al., 2000; National Center for Education Statistics, 1998, 2000) .

Wasley et al., 2000). Finally, because students in small schools are fewer, they are more likely to report receiving academic recognition, which in turn might result in increases in academic-self-concept and motivation for achievement (Slater, 1989; Stockard and Mayberry, 1992).

Third, reports from principals, teachers and students as well as data on crime incidents across school types, have linked small schools with better social behavior and safety. Different studies have shown that larger high schools are associated with greater problems with truancy and disorderliness in the school (Heaviside, Rowand, Williams, & Farris, 1998; Haller, 1992). Episodes of violence and discipline problems appear to rise rapidly with school size and this link is much higher for serious crimes (NCES, 1998, 2000; Leung and Ferris, 2008; Ferris and West, 2004, Cotton, 1996). Students in small schools also appear to have fewer incidents with gangs and vandalism and are linked to lower use of tobacco and other drugs compared to students in larger schools (Page, 1991; Nathan and Thao, 2001). Particularly regarding NYC high schools, Darling-Hammond et al. (2002) also find that discipline is higher in smaller schools. As regards the effect of school size on bullying and other forms of peer victimization, however, the evidence is mixed. Ma (2001) finds that students in small schools are more likely to become bullies than victims. Brezina, Piquero, and Mazerolle (2001) find that boys in small high schools report higher rates of aggression and conflict while Gottfredson, Payne, and Gottfredson (2005) conclude there is no significant relationship between school size and either student or teacher self-reports of being victimized. Other studies also find no evidence of a link between size and bullying (O'Moore, Kirkham, & Smith, 1997; Wolke, Woods, Stanford, & Schulz, 2001). More recently however, Bowes et al.(2009), using a nationally representative sample of elementary students, find that school size is associated with an increased risk of becoming a victim of bullying.

While the preponderance of research appears to support the hypothesis that smaller schools are positively related to a more nurturing and caring learning environment, none of these studies provide casual evidence supporting the link between small schools and a better learning environment. The main concern is that there are some characteristics, unobserved to the researcher, that drive students to attend a small school and are also related to how students experience their learning environment. So, for example, students who are more used to having a more supportive and motivating environment either at their homes or in previous schools, are more likely to go to small schools and therefore report that their schools foster better

interpersonal relationships. Moreover, most of these studies examine one of these outcomes in isolation. Understanding whether small schools affect one or several dimensions of a student's well being, however, is of crucial importance to disentangle the true costs and benefits of reducing school size.

The main contribution of this paper is the careful treatment of the possible bias from selection into different types of schools. For this, we rely on the use of instrumental variables. In addition, we bring together the literature on school size and different dimensions of a schools' learning environment to better understand through what specific mechanism small schools affect a school's learning environment. Moreover, because small schools differ considerably one from the other, we also consider the schools' vintage by separating old and new small schools. On the one hand, smaller schools, by their own nature, may be more affected by key staff and leadership. More importantly, if the benefits of small schools are mostly based on building strong relationships between students, staff, parents and the community, then these might increase over time (Stiefel, et al., 2000). On the other hand, the evidence suggests that newer buildings are associated with better academic and behavioral outcomes (Jago and Tanner, 1999; Phillips, 1997; Bowers and Burkett, 1987). In NYC the distinction between old and new small schools is particularly relevant as previous research has found that the academic benefits attributed to small schools are largely driven by the newer small schools (Schwartz, Stiefel and Wiswall, 2012). Beginning in 2003, hundreds of new small schools were opened across the city as part of an unprecedented investment in high school reform and with high support by the Bill & Melinda Gates Foundation and other philanthropies. Most of these schools shared similar characteristics and received particular support to prevent them from suffering during their nascent years (Bloom et al., 2010).[3] In this paper we thus consider the differences between old and new small schools, rather than assuming a common small school effect. Because the new small schools created under the Bloomberg-Klein administration differ considerably from those established before, we divide small schools into those created in 2003 or after and those that existed prior to the latest wave of reform.

In summary, whether students are actually experiencing a more positive learning environment along all of the dimensions in which small schools are expected to bring positive

[3] Other major difference of these new small schools include the exemptions granted in their first years from serving some groups of special needs students and following all union rules on hiring teachers (See Schwartz et al., 2012; Cahill and Hughes, 2010; Bloom et al., 2010 for more details)

results, is an empirical question. But all of these outcomes are related. Do students report feeling safer at school but at the expense of having worse relationships with students and teachers? Or do students feel more encouragement and expectations to go to college in small schools but in the face of a more competitive and less caring environment? We believe our paper provides a novel and needed contribution to this stream of research by looking at the effect of small schools on a comprehensive set of measures of students' well-being and satisfaction. Moreover, none of the past studies on a school's learning environmnet has addressed the potential selection bias of the choice to attend a small school. We do so in this paper exploiting IV methods to obtain causal estimates. Finally, we address the heterogeneity of small schools by looking at the difference between small new and old schools.

III. Data

a. Sources

We use and combine student-level data from the NYC Department of Education (NYCDOE): i) administrative datasets and ii) students' school surveys. Additionally, we match the student level data to publicly available school-level datasets from NYCDOE, which include information on schools' characteristics by grade level, total enrollment, opening date of the school, and school's address.

Our sample of high schools includes 25,556 students entering 9th grade for their first time in 2010 and who attended NYC public high schools in 8th grade. We include students in general education as opposed to students attending specialized program schools (such as last chance high schools or schools with a focus on pregnant mothers or immigrants) or schools with predominantly full-time special education students. We also include students who have responded to all of the student survey questions we explore in this paper and for whom we have their 8th grade residence information and 8th grade reading and mathematics z-scores.[4] We exclude schools and students located on Staten Island. Only three small high schools exist there and students generally did not travel to Staten Island or outside Staten Island to attend a small high school.

[4] Regression results for each question, using the sample of students who has answered that specific question and irrespective of whether they answer other question in the student survey, are similar to the results presented in this paper.

The administrative data, drawn from a census of NYC public high school students, include student characteristics, such as socio-economic status, demographics and educational program participation, as well as a number of outcomes. We include whether a student participated in the free lunch program-an indicator of poverty status- and other demographic and education program variables, including race/ethnicity, gender, foreign born status, whether or not a student was an English language learner, overage for grade, and prior test scores in 8th grade reading and mathematics, which we convert to z scores with mean zero and standard deviation one[5]. Also part of the student and school data are residence and school addresses, which enable us to calculate Euclidean distance, in miles, between home and schools.

Finally, school surveys provide insight into a school's learning environment and contain a large number of questions regarding students', teachers' and parents' subjective perceptions of their school. Results obtained from these surveys form part of the school's overall report card grade calculated by the NYCDOE, a key ingredient of the city's efforts to increase accountability. School surveys are distributed to all parents, all teachers, and all students in grades 6 - 12. The student survey contains 80 questions, most of which have four response choices, with information about students' perceptions about their schools, teachers and peers. The students' response rate has increased since these surveys were first implemented in 2006-07, from only 65% of all students in that year to 83% of students in 2011.[6] Response rates, however, vary by question.

For our analysis of the effect of small schools on a school's learning environment we identify questions that most closely match the dimensions of school climate that are linked to school size in the literature, namely i) interpersonal relationships; ii) expectations and support and iii) social behavior and safety. We examine 12 outcomes from the student surveys.[7] Finally,

[5] Test z-scores for each exam were calculated using all NYC students taking the exam on the same date.
[6] The response rate for teachers has also experienced an upward trend, from 44% in 2007 to 82% in 2011. Parents' participation still lags behind but has gone up from 26% in 2007 to 52% in 2011.
[7] In the appendix, we show the results for other relevant question. Only eight questions were not matched to any of the hypotheses, mainly because they related to specific types of student work in classrooms and students' perceptions about teachers' satisfaction. Classroom size and curriculum design is not directly related to any of the hypothesis on school size and climate. Teacher satisfaction, on the other hand, while relevant for school climate, could be better answered with responses from teacher surveys. The questions that were left out are: i) whether the student completed an essay or research project using multiple sources of information, ii) whether the student completed an essay or project where you had to use evidence to defend your own opinion or ideas?, iii) whether students thought their teachers enjoy the subjects they teach, iv) whether students thought their teachers connect what they are learning to life outside of the classroom; v) whether student worked by independently during class?,

we define small schools by the total number of students enrolled in grades 9 to 12 when the student enters 9th grade. Based on previous studies, our primary definition of a small school is one with 550 or fewer students enrolled (Bloom et al., 2010; Schwartz et al., 2012). We analyze effects for larger sizes to check for consistency of our results. A new school is one that opened in 2003 or after, which marks the beginning of Bloomberg's 12 year terms as Mayor of NYC.

b. Construction of Dependent Variables

Using the results from the student surveys, we construct binary measures of students' perception of their school's learning environment. Students were asked to choose, among four options, their level of disagreement or agreement or how often they experienced a particular event. [8] For questions regarding their interpersonal relationships, academic expectations and support and most questions related to their feelings of safety, their choices were "Strongly Agree", "Agree", "Disagree" and "Strongly Disagree". Thus, we constructed dummy variables indicating whether the student agrees or strongly agrees to different questions related to these different dimensions. For measures of social behavior, we constructed a dummy variable equal to 1 and 0 otherwise, if the student responded "Most of the time" or "All of the time" to statements about unfavorable situations such as bullying, gang activity or physical fights at school. A list of all questions and response choices can be found in Table 2 in the Appendix. It is important to emphasize that while there are multiple choices, binary outcomes capture the most salient effects and are more straightforward to present and interpret (Gibbons and Silva, 2011). As shown in Table 1, while there are large variations in the student's response rate across answer choices and also depending on the specific questions, most students tend to agree or strongly agree that interpersonal relationships, academic expectations and feelings of safety are good at their school. Moreover, most students believe that gangs and other unfavorable social behaviors occur, overall, in rare occasions.

Note that, as most studies that examine a school's learning environment or climate, these measures are based on subjective perceptions that a problem is prevalent rather than more objective counts of its actual rate of occurrence (Gibbons and Silva, 2011). Some recent evidence

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vi) whether student worked in groups of 2 to 6 students?, vii) whether student had whole-class discussions?, and viii) whether student participated in hands-on activities such as science experiments?

[8] For questions about respect and teachers' attitudes towards the school and students (q6a-q6g), there was an additional option that students' could choose: "I don't know". We coded this answers as missing values which greatly reduced our sample in these questions.

suggests that subjective measures of wellbeing and school satisfaction are reliable and valid (Bertrand and Mullainathan, 2001; Krueger and Schakde, 2007). In particular, subjective wellbeing data pass a variety of validation tests such as being correlated to a person's recall of negative events, assessment of well-being by friends and family members, and health and physiological symptoms (Alesina et al.,2004 and Blanchflower and Oswald , 2004). Recently and specifically for NYC, Charbonneau and Van Ryzin (2012), using the surveys completed by parents of New York City public schools' students, that official measures of school performance are significant and important predictors of aggregate parental satisfaction, thus providing further support to these responses.

c) Data Description

As shown in Table 2, small schools are an important part of the NYC education landscape. Of the 25,556 students in our sample, more than one third enrolled in a small school in 2009. Also, most high schools (269 out of a total of 375) are small, with an average high school enrollment of 348 students compared to 1,810 students in large schools. In addition, these small schools were more likely to enroll girls, students eligible for free lunch, and overage or living in Bronx. Finally, students in small schools were disproportionally black and Hispanic and had much lower math and English z-scores in their middle schools

As discussed before small schools are heterogeneous. A school's vintage, in particular, is an important differentiating factor.[9] In our sample, while the average small school was seven years old, the average large school was 43 years old. This difference was mainly driven by the large number of small schools that opened since 2003. There were 186 small new schools (on average five years old) and only 83 old small schools (on average 13 years old) in 2010. The composition of students varied substantially between new and old small schools as well: students in new small schools earned considerably lower math and English z-scores than their counterparts in older small schools; also Asians and girls were more likely to go to old small schools as were students living in Manhattan. Finally, Hispanics, black students, students from Brooklyn and eligible for free lunch, were more likely to enroll in the new small school.

As shown in Figures 1 and 2, a school's learning environment also differs considerably across school types. As predicted, based on the previous literature, students in small schools

[9] This is not the case for large schools since very few opened in the last decade. There are only 3 large schools that opened in or after 2003.

appear to have a more favorable perception of their school's leaning environment along the three dimensions on which we focus: a larger share of students agreed that interpersonal relationships, academic expectations, and support and social behavior were better in small schools. Comparing small new and small old schools, although results do not appear much different, particularly regarding perceptions about academic support and expectations, we can see there are some slight contrasts: interpersonal relationships and social behavior appear to be better in old small schools while safety appears to be somewhat better in small new schools. These graphs provide a first impression of differences across school types by size and vintage. Of course, since observed characteristics of students differ as well, these differences may simply reflect the kinds of students who attend each type of school. We now turn to a discussion of the methods we use to estimate unbiased effects of attending small schools

IV) Methodology

a) Common Small School Effect

We use a regression model to explore the relationship between small schools and students' perceptions of the school climate. The explicit empirical model we use is of the following form,

$$(1) Y_{ijt} = \beta_0 + \beta_1 Small_{ijt} + \beta_2 Student_{ijt} + \beta_3 Y_{ijt-1} + \varepsilon_{ijt}$$

where Y_{it} represents a dimension of a school's learning environment for student i in school j and time t (year 2009-2010). $Small_{ijt}$ is an indicator variable that takes a value of 1 if, in the year (t) that the student enrolled in high school *j*, that school was small, i.e. enrolled 550 or fewer students. $Student_{ijt}$ is a vector of student-level demographic covariates, including 8th grade reading and math z-scores, gender, race, free lunch status, English language proficiency, overage for grade, residence boroughs and foreign-born status. We also include lagged values of the dependent variable, captured by Y_{ijt-1}. All standard errors are appropriately modified to reflect possible heteroskedasticity and clustering of students at the school level.

b) Heterogeneity in Treatment: New Versus Old Small Schools

Following Schwartz, Stiefel and Wiswall (2012), we explore school level heterogeneity by allowing for different effects of small schools by vintage of the school . We model:

$$(2) Y_{ijt} = \beta_0 + \beta_1 Oldsmall_{ijt} + \beta_2 Newsmall_{ijt} + \beta_3 Student_{ijt} + \beta_4 Y_{ijt-1} + \varepsilon_{ijt}$$

where $Newsmall_{ijt}$ is an indicator variable that takes a value of 1 if the school is small and new, that is opened beginning 2003 and enrolls fewer than 550 students. By contrast, $Oldsmall_{ijt}$ is an indicator variable that takes a value of 1 if the school is small but opened before 2003. As discussed above, new small schools are considerably different from older small school schools so that isolating the effect of each small school type allows to isolate whether school size is the key school characteristic for student performance or whether other features of the school are important

c) Estimation Strategies

First, we estimate this model using ordinary least squares regression (OLS). The extremely rich set of individual characteristics allows us to mitigate the problems potentially caused by unobserved characteristics that might affect a school's learning environment and be correlated with small school attendance. In particular, estimates of β_1, the coefficient on small school attendance, may be biased under OLS regressions, if for example family environments or student motivation is simultaneously related to both small school attendance and a school's learning environment. We use a value-added model, including the student's perception of his or her school's learning environment in 8th grade, under the assumption that unobservable student-level influences of this perception are time-invariant. The use of a lagged variable is particularly important because it can serve as a proxy for experiences of students' learning environment (Todd and Wolpin, 2003, 2007).

One method for addressing identification problems, in particular the possible selection of students into small schools on the basis of unobservable characteristics, is the use of instrumental variables estimation. The required instruments must affect small school attendance but be uncorrelated with the omitted variables. Estimating the effect of this exogenous variation in small school attendance on a school's learning environment gives a consistent estimate of the impact of attending a small school. We thus use as instruments for small school attendance

measures of distance, which affect small school attendance but do not directly a school's learning environment except through small school attendance. The instruments we use are the distance between the nearest small school or large school and the student's home, specifically, the minimum Euclidean distance to the nearest small school address from student's 8th grade residence address and the minimum Euclidean distance to the nearest non-small school address from student's 8th grade residence address. Note that we include borough fixed effects so that we control for unobserved factors correlated with distance at the borough level.

Instrument Validity

Our use of distance measures as instruments is motivated by prior research that has shown that distance is an important predictor of school choice.[10] While its use is not uncontroversial, because families' and even schools' location decisions may not be random, its use has become more widespread and largely accepted. The earliest studies that used distance as instruments mainly examined the returns to schooling (Card , 1995, Kane and Rouse , 1995). In a recent study of small schools in NYC and academic outcomes Schwartz, Stiefel and Wiswall (2012) have used distance instruments to deal with selection bias. Schwartz, Stiefel , Wiswall and Boccardo (2012) have used a similar framework to examine the effect of STEM schools in NYC in closing the gender gap in STEM. Further support for the use of this identification strategy is provided by several recent papers, mainly the educational evaluation of Chicago schools (Cullen et al., 2005), an evaluation of small schools (Barrow et al., 2010) and charter schools (Booker et al., 2011) in Chicago. In general, while the question of whether families or even schools randomly locate across their neighborhoods or city cannot be completely dismissed, controlling for characteristics capturing the location decision of the household we can assume that the location of schools is exogenous. Furthermore, location of small schools in NYC was determined mainly by historical circumstances so it seems unlikely that the location of schools

[10] A consistent result in the literature on school choice is that location (and specifically distance) of a school relative to a student's home residence is an important variable for students and parents in their choice of school. Schneider and Buckley (2002) report that in parent internet search behavior, location is the second most sought after piece of information after school demographics. Burgess et al. (2010), in a study of parental preferences for schools in England, conclude that parents make tradeoffs among academic attainment, school socio-economic composition, and travel distance. Hastings, Kane and Staiger (2006) find that proximity is highly valued by all in North Carolina, although families with strong preferences for academics are generally willing to tolerate longer distances. Saporito and Lareau (1999) conclude that both whites and blacks tend to choose schools close to their homes but whites are often willing to travel further to attend schools with higher proportions of white students.

responded to some strategic population targeting. Location is driven by availability of space and myriad administrative concerns rather than targeted at the local residents (Schwartz, Stieffel and Wiswall, 2012).

We conduct a few tests to show the validity of our instruments for our sample. First, we show that the excluded distance instruments strongly predict small school attendance. Table 3 shows the first stage equations for small school attendance controlling for the distance between the nearest large school and the student's home as well as the minimum distance to the nearest small school to the student's home. As we can see, distance measures are important determinants of small school attendance: the further a student lives from a small school, the less likely she/he is to attend, even conditioning on a rich set of covariates. The significant coefficients on the squared and cubic terms underscore that the relationship between distance and small school attendance is not linear. Additionally, the last rows in table 3 show the p-value of the F-test on the joint significance of the excluded instruments, which further supports the hypothesis that the combined set of excluded instruments are correlated with small school attendance.

For equation (2) we instrument attendance to a new small school and to an old small school using a separate set of distance measures. In particular we use, besides the distance to the nearest large school, the distance from the student's residence to the nearest old small school and the distance to the nearest new small schools. As shown also in Table 3, the probability of attending a new small school decreases with an increase in the distance to the nearest new small school. In the same token, the probability of attending an old small school is negatively affected by the distance to the nearest small old school. The instruments are jointly significant as evidenced by the p-value of the F-test.

For the instruments of small school (new and old small school) attendance to be valid, however, it is also necessary that they do not have an independent impact on the school's learning environment, once the impact of small school (new and old small school) attendance is taken into account. We might still be concerned if, for example, more motivated students move closer to a small school or distance from a student's residence to a small school also affects the school's learning environment. While we cannot directly test whether instruments are truly exogenous variables, i.e. uncorrelated with any unobserved factors that might influence the school's learning environment, we test whether the instruments are correlated with observed variables that we believe might influence the school's learning environment.

Including the student's middle school measure of his or her school's learning environment is one way to deal with this problem. This baseline measure can be taken to be a sufficient statistic for unobserved input histories as well other unobserved student characteristics (Todd and Wolpin, 2003). This value-added regression framework provides a natural way to account for prior influences and estimate the students' current perceptions of their learning environment. In the absence of test measurement error, only current unobservables remain unaccounted and since these fixed components are likely highly correlated with lagged measures of the schools' learning environments, much of the variation in current unobservables mostly disappears.

Even conditioning on a rich set of covariates and lagged values, we might still be concerned about two major threats to the validity of our instruments. First, distance may not be exogenous to the school's learning environmnet if the place of a student's residence is an expression of other, non-observable factors that affect both student's residence and whether a student is more likely to feel welcomed or safe at school for example. Second and a related concern is that schools are not randomly located, which make the distance IV invalid[11].

The issue of residential location based on schooling options is not as relevant for the case of the NYC high schools. Choice of high schools is based on a comprehensive, highly structured (and relatively complex) system by which 8th graders apply to up to 12 schools, ranked in order of preference, across the city. Thus, geographic preferences do not play such an important role. Students do move but mobility is not high-only 13% of students changed zip codes between 7th and 8th grade. Those who did move lived slightly closer to a small school in 8th grade than those who did not move during that period (0.90 miles vs 1 mile) but this difference is not significant at the 5% confidence level. An additional test of the exclusion restriction is whether distance to small schools is correlated with observable student characteristics in a zip code. We find that the average student characteristics are not significantly related to the distance to the nearest small schools or small new school (see Table 1 in Appendix). Only zip codes with a higher share of students receiving free lunch or with fewer students living in Queens appear to be slightly closer

[11] Another possible threat to the validity of our IV strategy is that proximity to a particular school may influence the outcomes of students in other schools through a school competition spillover. The school performance metrics in NYC use city-wide comparison groups. Schools are often compared to geographically distant schools that are otherwise similar in student body composition. Thus, the extent of competitive pressures from geographic distance may be considerably less relevant than across district competition.

to the nearest small school or new small school. The story is somewhat different for the distance to old small schools, which is correlated with a number of other student characteristics, including gender, race and overage status. That student characteristics are correlated with distance is not by itself problematic since these entire student characteristics are observable in our sample and are included as control variables in our analysis.

V) Results and Discussion

In this section, we will first show OLS and IV results for the common small schools effect and then, relaxing the restriction that small schools are homogenous, we estimate the specification from equation (2) separating small new and old small schools.

a) Common Small School Effect

What is the relation between small schools and different experiences of a school's climate? To provide an answer to this question we present results from the linear regression models in which students' perceptions of his or her school climate are modeled as a function of small school attendance in addition to a whole set of individual controls, including lagged values of the school's learning environment.

We start by presenting OLS results of the effect of small schools on the different dimensions of a school's learning environment that we focus on i) interpersonal relationships; ii) expectations and support and iii) social behavior and safety. As shown in the top two panels of Table 4, OLS results show some interesting (but expected) results: all coefficients are positive and significantly different from zero, suggesting that students in small schools are more likely to report having better interpersonal relationships as well more support and higher academic expectations. Thus, students in small schools are between 3.5 and 4 % more likely to agree or strongly agree that teachers encouraged them to succeed, expect them to continue their education after high school and help them develop challenging goals relative to students in large schools. Feelings of connectedness and belonging are also higher, with a higher likelihood of around 20% and 10% that students in small schools agree or strongly agree that people at their school know who they are and look out for them, respectively. Students also appear to be more caring among each other in small schools.

Finally, we look at students' feelings of safety and perceptions of social behavior. As shown in panels C and D in Table 4, the picture for this other dimension of a school's learning environment is very similar to that we found for interpersonal relationships and academic support. The OLS regression results show that safety is higher in small schools: students are 2.5% more likely to feel safer in their classes and around 6% more likely to feel safe in the hallways. They are also 0.1% less likely to report staying in their homes because they feel unsafe at school. Moreover, small schools are significantly and negatively associated with gang activity, bullying and physical fights in the school.

While OLS results consistently show a strong association between small schools and a better learning environment, IV results reveal that there are practically no differences between small and large schools in any of the dimensions we consider. As shown in Table 5, once we instrument for small school attendance, the coefficients on small schools become statistically insignificant for all outcomes with only one exception. Students in small schools are still less likely to stay at home because they feel unsafe at their school but, otherwise, in terms of feelings of belonging and connectedness, academic expectations and support as well as other measures of social behavior and safety, learning environments in large and small schools appear to be similar.

To sum up, the findings of a significant effect of small schools on the school's learning environment using OLS specifications but of no statistically significant effects in the IV estimation, suggest there is positive selection on unobservable variables into small schools. These unobservable could be anything, from parent support to each student's intrinsic motivation. In any case, it is not small schools that cause students to feel happier. On the contrary, small schools, which are believed to provide a more nurturing, more academically challenging and safer environment, appear to be no different from large schools in terms of the experiences that students report of their school's climate.

There may still be differences between old and new schools. We explore whether this is the case next.

b) Heterogeneity in Treatment: New Versus Old Small Schools

We now turn to examine the effects of old and new small schools separately. We re-estimate the OLS and IV models including indicator variables for whether the student attends a new small school or an old small school.

The OLS estimates for a range of outcomes related to interpersonal relationships and academic expectations and support, are presented in Table 6. The positive and significant coefficients suggest that students in new small and old small schools fare better than large schools along several dimensions: compared to students in large high schools, students in new and old small schools are more likely to agree that teachers encourage them to succeed and expect them to continue their education after high school; students in small old and new schools are also more likely to agree that adults at their schools know their name and they feel taken care of by adults and other students relative to students in larger schools. Turning to results for social behavior and safety in Table 7, we also find that safety in and outside the classrooms are better in new small schools as well as in old small schools. In addition, incidents of gangs, bullying and physical fights appear to occur less often in small old schools and new small schools relative to large schools, suggesting social behavior is indeed correlated to school size. Along all these dimensions, there does not seem to be much of a difference between old new and old small schools as evidenced by the T-test of the difference between new and old small schools-results for most outcomes are insignificant at any conventional level.

A different story emerges after selection into these schools is taken into account. A glance at Table 8 reveals first that instrumental variable estimation in some cases switches the sign of the estimated effect for new small schools from positive to negative for some specifications. More importantly, the coefficients for new small school become statistically insignificant coefficients-in most cases the positive effects of small new schools on interpersonal relationships and academic support disappears when we use IVs to control for unobservable student characteristics. Second, IV estimates show that old small schools do appear to have an effect on students' perceptions of their school's level of academic expectations and support and feelings of connectedness and belonging. Students in small old schools are around 30% more likely to agree that adults and students in their schools look out or care for them. The magnitude of these effects actually becomes much larger using IV relative to using OLS. Thus, a higher likelihood of around 3% that students in small old schools (relative to large schools) report feeling encouraged to succeed and expected to continue their education, turns into a 22% and 15% higher likelihood respectively, when controlling for unobservables using IV. Interestingly, out if all the outcomes that we examine, only one outcome appears to be different (and better) for students in new small

schools relative to those in large schools: students in new small schools are likely to agree that most adults they see every day in their schools know their name or who they are.

As shown in table 8, results for social behavior and safety indicate that, again, after controlling for selection into new and old small schools, only old small schools appear to have an impact on the students' perceptions of safety at school and social behavior. While students in old small schools do not differ significantly from students in large schools in their probabilities of feeling safe in or outside their classrooms, they are around 15% less likely to stay home because of feeling unsafe at their schools. Social behavior is consistently better in old small schools. IV results show that students in small old schools are 30% less likely to report that gang activity or physical fights occur at their schools often and 23% less likely to report that bullying happens most or all of the time relative to students in large schools. Along all of these dimensions, new small schools appear no different than large schools. Finally, there appear to be some significant differences between new and old small schools in terms of social behavior and interpersonal relationships as evidenced by the T-Tests of the effect size differences.

To sum up, these results, combined, underscore the heterogeneous nature of small schools--there are different effects for new and old small high schools. OLS results hide these differences as they show, along all dimensions, that both old and new small schools provide a better learning environment than large schools. After correcting for selection into small new and old schools using distance instrument, however, most of the positive effects of attending a new small school disappear: small new schools are similar to large schools in terms of the quality of interpersonal relationships, academic expectations and support as well as behavioral problems and safety. Students in old small schools, on the contrary, appear to be more likely to agree that their schools provide a more caring and supportive environment relative to students in larger schools. Academic expectations are also higher in old small schools. Social behavior as measured by the rate of occurrence of bullying, physical fights and gang activities, as well as some measures of feelings of safety, are also better in small old schools relative to large schools. Differences between old and new schools also become more marked relative to OLS results: old small schools appear to be significantly better than new small schools in terms of social behavior and feeling cared for by other adults and students at the school.

c) Robustness Checks

In this section we test the robustness of our results. First, we use a different set of instruments to test the sensitivity of our results to the use of distance to instrument for type of school attended. Second, we add another cohort of students to make certain results are not specific to the cohort of students entering 9th grade in 2009/10 (cohort 2009). Finally, we re-estimate our models with a cutoff of 650 students for a small school. Our main conclusions remain unchanged.

In Table 10, we provide suggestive evidence that our results are not sensitive to the choice of instruments. We instrument new and old small schools by the attendance rate of the student in 7th grade and the grade span of the school the student attended in 4th grade (JUSTIFY THESE INSTRUMENTS). The IV estimates for all dimensions show that students in old small schools have a more caring environment, in which students feel more academically motivated than in larger schools. Safety and social behavior are also better in old small schools.

We re-estimate the models adding the cohort of students that entered 9th grade in 2008/09 and including an interaction between the indicators for small old and new high schools and each cohort of students. As shown in Panels A and C in Table 11, the positive effects of old small schools on interpersonal relationships and academic expectations and support obtained using OLS, remain using IV. The bottom Panels also suggest social behavior is better in old small schools relative to larger schools, either for the 2009 or 2010 cohort. There appear to be fewer differences between small and larger schools in terms of safety although students in old small schools report feeling safer outside their classrooms in old small schools relative to students in large schools. Overall, students in either for the 2009 or 2010 cohorts that attended new small schools do not appear to be significantly different from students in large schools.

Finally, we re-estimate our IV models using a cutoff of 650 students for a small school. As shown in Table 12, while most results are statistically insignificant, results are substantively unchanged.

d) Discussion: why old and new small schools have different learning environments?

If a better learning environment is not a natural by-product of smaller schools then what school's characteristics make students behave better and feel more engaged, and safer while in their schools? Understanding the differences between old small schools and new schools can shed more light on this question.

One of the major differences between the newer small schools and those created before 2003 is co-location. Between 2003 and 2009, around 95% of new small schools (177 out of 186 new small schools) and students in new small schools (5,457 out of 5,803), were sited in large comprehensive schools. Old small schools, in contrast, were much less likely to be created within an older building, so that only around half of old small schools (48 out of 83 old small schools) and students in old small schools (1,534 out of 2,990) were co-located with other schools. Co-location by itself may be detrimental for a better learning environment. As anecdotal evidence and a few case studies show, there are several challenges involved in reusing large high schools to house several small high schools. The Coalition for Education Justice (2010) offered several examples of schools that have suffered by co-location in terms of reduced classroom and enrichment space, as well as space for counseling, tutoring, and professional development. While a more rigorous study of the effects of co-location is merited, it is possible that sharing space and cutting back on important support resources for students can be detrimental for a school's learning environment.

A second important difference between small new and old schools relates to their focus on academic outcomes and the school's learning environment. Newer small schools were created with the clear objective of raising academic standards in a new wave of education reforms emphasizing accountability and testing. On the contrary, schools created in the 90's in particular, focused on serving undeserved students and were usually the initiative of the

community, parents, and teachers. Schools were expected to "foster student choice and innovative instruction responsive to the diversity of our student population" (Fliegel 1993, p. 76). These differences might suggest that schools, given a limited set of resources, face a trade-off between a focus on academic outcomes or their learning environment. This trade-off, however, might be counterproductive given that a positive school's learning environment which makes students feel engaged or safe, is inextricably linked to the student's academic performance (Vignoles and Meschi, 2010).

To understand better what other school characteristic differ by a school's vintage, we show OLS results for a series of school-level variables in Table 13. After controlling for differences in the students' composition, we see that both old and new small high schools receive substantially more funding and have better teachers than large schools. Large schools only seem to fare better than small schools in terms of the number of teachers with MA education or more. In addition, results from an F-test of the differences between small old and small new schools, show that small old schools appear to have more experienced teachers and more with MA degrees than small new schools. Turnover is also much higher at small new schools, which are, in addition, more likely to have teachers with no valid or appropriate certification relative to small old schools. Finally, while class size does not seem to differ by vintage, school funding shows there are major differences between small new and small old schools. First, the school's total and direct expense are higher at small old schools. Second, expenditure at the classroom level and expenditure devoted to teachers in the classroom is also significantly higher in small old schools relative to small new schools.

Thus, while not conclusive, these findings underscore the fact that the better learning environment in small old schools could be the result of more funding at the school and classroom

level and better teachers, as measured by higher levels of education and experience. Moreover, the particular circumstances which accompanied the creation of new small schools, mostly in co-located buildings and with wide public and private support but favoring accountability and tangible results, could explain the observed dichotomy found in small new schools: better academic results at the expense of the school's learning environment compared to small old schools.

VI) Conclusion

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Table 1. Student Survey's Response Rate, by Answer Choice

	Strongly Agree	Agree	Disagree	Strongly Disagree
Academic Expectations and Support				
My teachers encourage me to succeed	33.5%	55.5%	8.9%	2.1%
My teachers expect me to continue my education after high school	44.1%	47.6%	6.0%	2.3%
My school helps me to develop challenging academic goals	18.9%	57.4%	19.3%	4.4%
Belonging and Connectedness				
Most adults I see at school every day know my name or who I am	21.3%	49.3%	23.6%	5.8%
The adults at my school look out for me	15.4%	57.8%	21.1%	5.8%
Most students in my school help and care about each other	10.1%	48.6%	29.0%	12.2%
Social Behavior and Feelings of Safety				
I am safe in my classes	33.2%	55.3%	7.9%	3.6%
I am safe in the hallways, bathrooms, and locker rooms at my school	27.0%	52.3%	14.8%	5.9%
	Never	**Some of The Time**	**Most of the Time**	**All of the Time**
I stay home because I don't feel safe at school	85.1%	10.1%	2.5%	2.3%
There is gang activity in my school	58.4%	25.2%	7.5%	9.0%
Students threaten or bully other students at school	33.9%	49.3%	9.6%	7.2%
Students get into physical fights at my school	22.7%	55.3%	13.0%	9.0%

Table 2. Descriptive Statistics of NYC HS Students by School Size and Age Category.

	All	Large	Small	Small	
				New	Old
Schools					
Number of schools	375	106	269	186	83
Number of students	25,556	16,773	8,783	5,803	2,980
Enrollment	761	1,810	348	324	401
Age	18	43	7	5	13
Students					
8th grade Reading z-score	0.24	0.35	0.02	-0.04	0.15
8th grade Math z-score	0.32	0.47	0.03	-0.04	0.17
Female	53.9%	52.5%	56.7%	56.0%	58.2%
Asian	21.8%	27.8%	10.3%	8.5%	13.8%
Black	27.3%	22.6%	36.3%	38.0%	32.9%
Hispanic	38.6%	34.5%	46.5%	47.8%	44.0%
Native Born	78.7%	76.1%	83.7%	83.7%	83.7%
English not spoken at home	50.4%	54.5%	42.7%	41.9%	44.1%
Limited English Proficiency (LEP)	4.1%	3.6%	5.2%	5.3%	4.8%
Overage	7.6%	6.5%	9.7%	10.4%	8.3%
Free Lunch	76.3%	72.8%	82.8%	84.7%	79.2%
Manhattan	11.9%	9.0%	17.5%	12.0%	28.2%
Brooklyn	34.9%	38.2%	28.6%	33.9%	18.4%
Queens	33.2%	40.4%	19.3%	19.6%	18.9%
Bronx	20.0%	12.4%	34.5%	34.5%	34.5%

Figure 1. Distribution of students who report positive interpersonal relationships and academic support, by school type

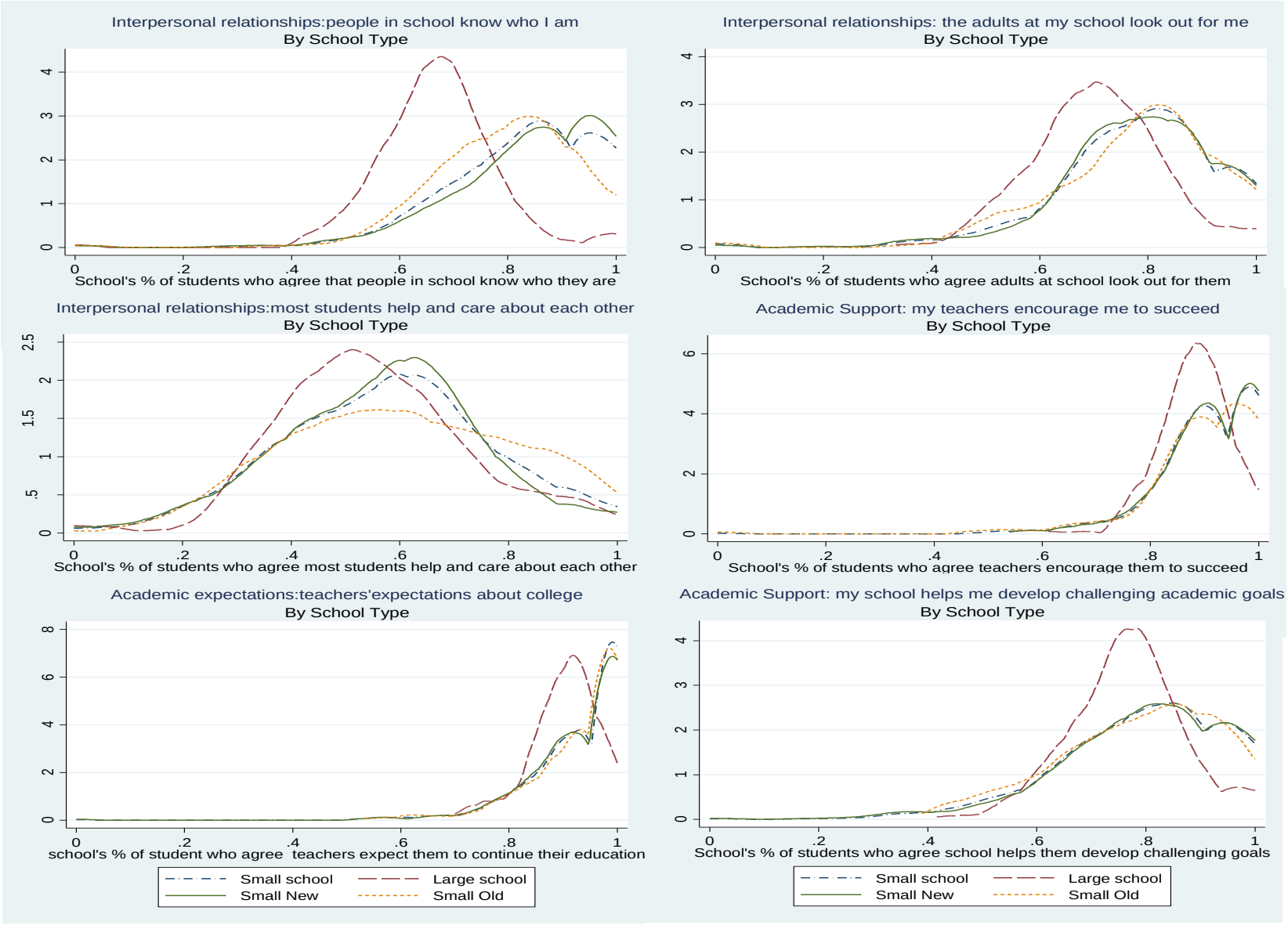

Figure 2. Distribution of students who report negative social behavior and positive feelings of safety, by school type

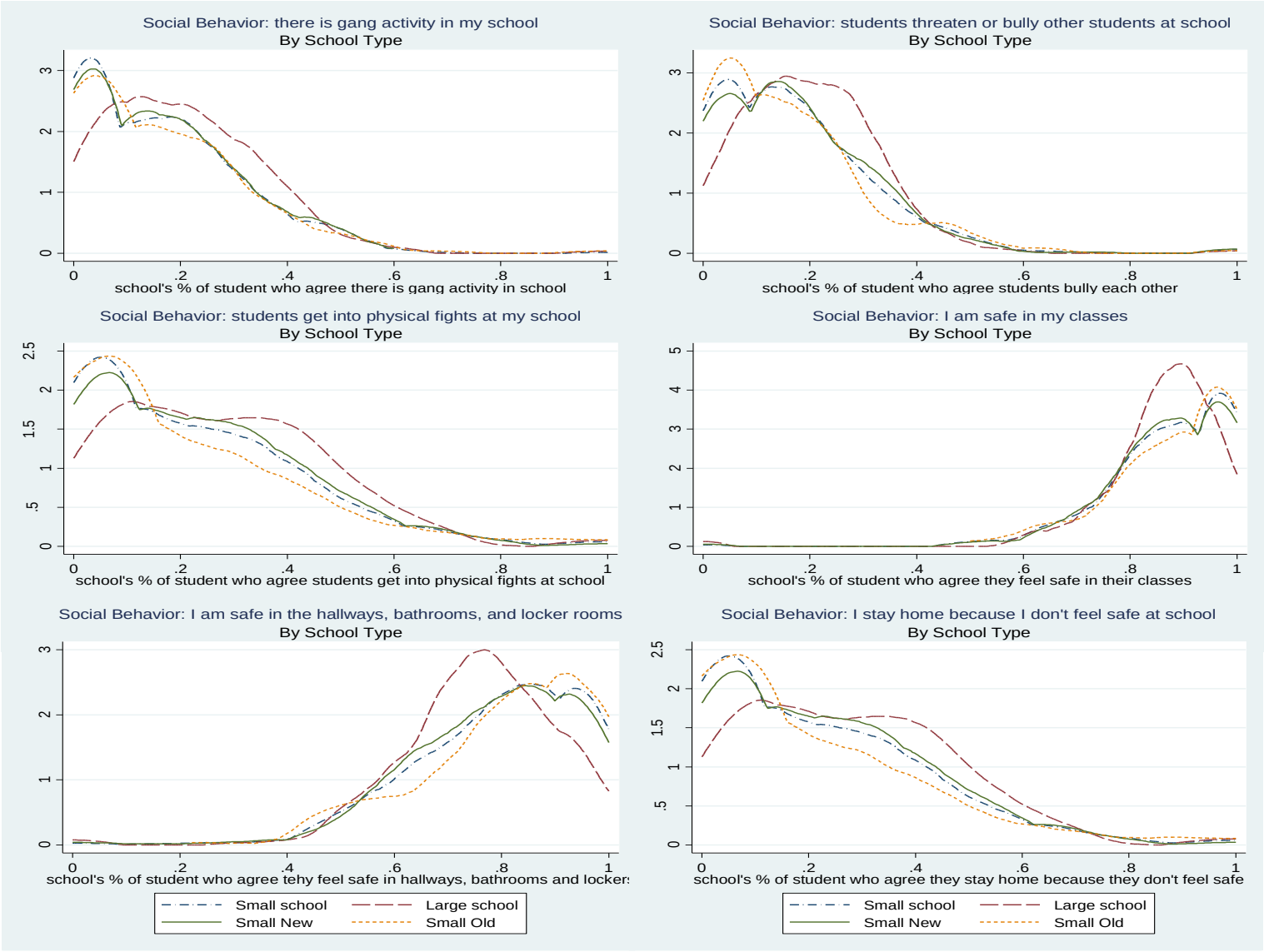

Table 3. First Stage, Likelihood of Attending a Small High School/ Small New High School/ Small Old High School

	Probability of attending a Small school		**Probability of attending a Small New school**		**Probability of attending a Small Old school**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Distance to Small School	-0.148***	-0.051***				
	(0.02)	(0.01)				
Distance to Large School	0.022*	0.010	0.033***	0.004	0.012*	0.005
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Distance to Small School-New			-0.097***	-0.042***	-0.022***	-0.011**
			(0.01)	(0.01)	(0.01)	(0.00)
Distance to Small School-Old			-0.005	0.026**	-0.043***	-0.021***
			(0.01)	(0.01)	(0.01)	(0.01)
Lagged (Y-t)		0.039***		0.034***		0.005
		(0.01)		(0.01)		(0.01)
Female		0.028*		0.013		0.016**
		(0.01)		(0.01)		(0.01)
Asian		0.008		0.013		-0.002
		(0.03)		(0.02)		(0.02)
Black		0.125***		0.104***		0.023
		(0.04)		(0.03)		(0.02)
Hispanic		0.086***		0.093***		-0.006
		(0.03)		(0.02)		(0.02)
Native Born		0.030***		0.020***		0.010*
		(0.01)		(0.01)		(0.01)
English not spoken at home		-0.048***		-0.035***		-0.014
		(0.02)		(0.01)		(0.01)
LEP		0.054*		0.029		0.024
		(0.03)		(0.03)		(0.02)
Overage		-0.004		0.011		-0.015
		(0.02)		(0.01)		(0.01)
Free lunch		0.059**		0.048***		0.009
		(0.02)		(0.02)		(0.02)
Manhattan		-0.025		-0.105*		0.086
		(0.07)		(0.06)		(0.05)
Brooklyn		-0.243***		-0.139**		-0.109***
		(0.07)		(0.06)		(0.04)
Queens		-0.260***		-0.181***		-0.082*
		(0.08)		(0.06)		(0.04)
8th grade Reading z-score		-0.012		-0.012**		0.001
		(0.01)		(0.01)		(0.01)
8th grade Math z-score		-0.033***		-0.032***		-0.001
		(0.01)		(0.01)		(0.01)
Constant	0.467***	0.408***	0.297***	0.214***	0.209***	0.194***
	(0.04)	(0.07)	(0.03)	(0.06)	(0.03)	(0.05)
R-sqr	0.067	0.162	0.043	0.102	0.040	0.073
Observations	25556	25556	25556	25556	25556	25556
Hansen J statistic (Chi-sq p-value)	0.0050	0.0494	0.0093	0.1460	0.0093	0.1460
F(stat) on joint impact of excluded IV's (p-value)	0.000	0.0021	0.000	0.0623	0.000	0.0002

***** p<0.01, ** p<0.05, * p<0.10**

Notes: Small schools defined as schools with less than 550 enrolled. Rob. std. errors are presented in parentheses, clustered by high school. There are 25,556 observations. Model presented of questions: "Adults look out for me" with respective lagged value.

Table 4. OLS results of effect of small schools on perceptions of learning environment

Panel A. Expectations and Support

	My teachers encourage me to succeed	My teachers expect me to continue my education after school	My school helps me to develop challenging academic goals
Small school	0.037***	0.035***	0.043***
	(0.01)	(0.00)	(0.01)

Panel B. Connectedness and Belonging

	Most adults I see at school every day know my name or who I am	The adults at my school look out for me	Most students in my school help and care about each other
Small school	0.183***	0.109***	0.064***
	(0.01)	(0.01)	(0.01)

Panel C. Social Behavior and Feelings of Safety

	I am safe in my classes	I am safe in the hallways, bathrooms, and locker rooms at my school	I stay home because I don't feel safe at school
Small school	0.024***	0.058***	-0.010***
	(0.01)	(0.01)	(0.00)

	There is gang activity in my school	Students threaten or bully other students at school	Students get into physical fights at my school
Small school	-0.069***	-0.043***	-0.081***
	(0.01)	(0.01)	(0.02)

***** p<0.01, ** p<0.05, * p<0.10**

Notes: Small schools defined as schools with less than 550 enrolled. Rob. std. errors are presented in parentheses, clustered by high school. There are 25,556 observations. For questions in Expectation, Connectedness and columns 1 and 2 of Safety category, dependent variable equal to 1 if student responded "Agree" or "Strongly Disagree" to each statement. For the Peer victimization and columns 3 of Safety category, dependent variable equal to 1 if student responded "All of the Time" or "Most of the time" to each statement. All models include the following student controls: a measure of the school's learning environment in 8th grade, indicators for female, black, Hispanic, Asian; native born; home language is English, free lunch eligibility, Math and English z-scores in 8th grade.

Table 5. IV results of effect of small schools on perceptions of learning environment

Panel A. Interpersonal Relationships

	Most adults I see at school every day know my name or who I am	The adults at my school look out for me	Most students in my school help and care about each other
Small school	0.152	0.091	0.072
	(0.09)	(0.10)	(0.10)

Panel B. Expectations and Support

	My teachers encourage me to succeed	My teachers expect me to continue my education after high school	My school helps me to develop challenging academic goals
Small school	0.081	0.065	-0.031
	(0.07)	(0.06)	(0.10)

Panel C. Social Behavior and Feelings of Safety

	I am safe in my classes	I am safe in the hallways, bathrooms, and locker rooms at my school	I stay home because I don't feel safe at school
Small school	-0.018	-0.046	-0.081*
	(0.07)	(0.09)	(0.05)

Panel D. Social Behavior and Feelings of Safety

	There is gang activity in my school	Students threaten or bully other students at school	Students get into physical fights at my school
Small school	-0.010	-0.016	-0.064
	(0.07)	(0.08)	(0.09)

***** p<0.01, ** p<0.05, * p<0.10**

Notes: Small schools defined as schools with less than 550 enrolled. Rob. std. errors are presented in parentheses, clustered by high school. There are 25,556 observations. For questions in Expectation, Connectedness and columns 1 and 2 of Safety category, dependent variable equal to 1 if student responded "Agree" or "Strongly Disagree" to each statement. For the Peer victimization and columns 3 of Safety category, dependent variable equal to 1 if student responded "All of the Time" or "Most of the time" to each statement. IVs: Minimum distance to Small and Large school. All models include the following student controls: a measure of the school's learning environment in 8^{th} grade, indicators for female, black, Hispanic, Asian; native born; home language is English, free lunch eligibility, Math and English z-scores in 8^{th} grade.

Table 6. OLS results of effect of small new and old schools on perceptions of expectations and connectedness

Panel A. Interpersonal Relationships

	Most adults I see at school every day know my name or who I am	The adults at my school look out for me	Most students in my school help and care about each other
Small New school	0.200***	0.114***	0.055***
	(0.01)	(0.01)	(0.02)
Small Old school	0.149***	0.099***	0.083***
	(0.01)	(0.01)	(0.02)
R-sqr	0.071	0.062	0.087
T-test –small new=small old (p-value)	14.96 (0.00)	1.17 (0.29)	1.93 (0.17)

Panel B. Expectations and Support

	My teachers encourage me to succeed	My teachers expect me to continue my education after high school	My school helps me to develop challenging academic goals
Small New school	0.036***	0.036***	0.048***
	(0.01)	(0.01)	(0.01)
Small Old school	0.038***	0.033***	0.034**
	(0.01)	(0.01)	(0.01)
R-sqr	0.035	0.033	0.046
T-test –small new=small old (p-value)	0.05 (0.83)	0.24 (0.62)	0.99 (0.32)

***** p<0.01, ** p<0.05, * p<0.10**

Notes: Small schools defined as schools with less than 550 enrolled. Small New schools are small schools opened in or after 2003. There are 25,556 observations. Rob. std. errors are presented in parentheses, clustered by high school. For questions in Expectation, Connectedness and columns 1 and 2 of Safety category, dependent variable equal to 1 if student responded "Agree" or "Strongly Disagree" to each statement. For the Peer victimization and columns 3 of Safety category, dependent variable equal to 1 if student responded "All of the Time" or "Most of the time" to each statement. All models include the following student controls: a measure of the school's learning environment in 8^{th} grade, indicators for female, black, Hispanic, Asian; native born; home language is English, free lunch eligibility, Math and English z-scores in 8^{th} grade.

Table 7. OLS results of effect of small new and old schools on perceptions of safety and social behavior

Panel A. Social Behavior and Feelings of Safety

	I am safe in my classes	I am safe in the hallways, bathrooms, and locker rooms at my school	I stay home because I don't feel safe at school
Small New school	0.024***	0.057***	-0.010**
	(0.01)	(0.01)	(0.00)
Small Old school	0.022**	0.061***	-0.009*
	(0.01)	(0.02)	(0.00)
R-sqr	0.050	0.066	0.019
T-test –small new=small old (p-value)	0.05 (0.82)	0.08 (0.77)	0.05 (0.83)

Panel B. Social Behavior and Feelings of Safety

	There is gang activity in my school	Students threaten or bully other students at school	Students get into physical fights at my school
Small New school	-0.069***	-0.039***	-0.079***
	(0.01)	(0.01)	(0.02)
Small Old school	-0.067***	-0.050***	-0.086***
	(0.02)	(0.01)	(0.02)
R-sqr	0.075	0.057	0.087
T-test –small new=small old (p-value)	0.03 (0.87)	0.66 (0.42)	0.13 (0.72)

***** p<0.01, ** p<0.05, * p<0.10**

Notes: Small schools defined as schools with less than 550 enrolled. Small New schools are small schools opened in or after 2003. There are 25,556 observations. Rob. std. errors are presented in parentheses, clustered by high school. For questions in Expectation, Connectedness and columns 1 and 2 of Safety category, dependent variable equal to 1 if student responded "Agree" or "Strongly Disagree" to each statement. For the Peer victimization and columns 3 of Safety category, dependent variable equal to 1 if student responded "All of the Time" or "Most of the time" to each statement. All models include the following student controls: a measure of the school's learning environment in 8th grade, indicators for female, black, Hispanic, Asian; native born; home language is English, free lunch eligibility, Math and English z-scores in 8th grade.

Table 8. IV results of effect of small new and old schools on perceptions of expectations and connectedness

Panel A. Interpersonal Relationships

	Most adults I see at school every day know my name or who I am	The adults at my school look out for me	Most students in my school help and care about each other
Small New school	0.198**	0.034	-0.017
	(0.09)	(0.11)	(0.10)
Small Old school	0.079	0.292**	0.313**
	(0.14)	(0.14)	(0.16)
T-test –small new=small old (p-value)	0.71 (0.40)	2.88 (0.09)	3.67 (0.06)

Panel B. Expectations and Support

	My teachers encourage me to succeed	My teachers expect me to continue my education after high school	My school helps me to develop challenging academic goals
Small New school	0.051	0.027	-0.050
	(0.07)	(0.06)	(0.10)
Small Old school	0.222**	0.155*	0.056
	(0.11)	(0.09)	(0.15)
T-test –small new=small old (p-value)	2.81 (0.09)	2.24 (0.14)	0.5 (0.48)

Notes: Small schools defined as schools with less than 550 enrolled. Small New schools are small schools opened in or after 2003. There are 25,556 observations. Rob. std. errors are presented in parentheses, clustered by high school. For questions in Expectation, Connectedness and columns 1 and 2 of Safety category, dependent variable equal to 1 if student responded "Agree" or "Strongly Disagree" to each statement. For the Peer victimization and columns 3 of Safety category, dependent variable equal to 1 if student responded "All of the Time" or "Most of the time" to each statement. IVs: Minimum distance to Small New, Small Old and Large school. All models include the following student controls: a measure of the school's learning environment in 8th grade, indicators for female, black, Hispanic, Asian; native born; home language is English, free lunch eligibility, Math and English z-scores in 8th grade.

Table 9. IV results of effect of small new and old schools on perceptions of safety and social behavior

Panel A. Social Behavior and Feelings of Safety

	I am safe in my classes	I am safe in the hallways, bathrooms, and locker rooms at my school	I stay home because I don't feel safe at school
Small New school	-0.075	-0.096	-0.060
	(0.07)	(0.10)	(0.05)
Small Old school	0.109	0.076	-0.148**
	(0.11)	(0.14)	(0.07)
T-test –small new=small old (p-value)	2.61 (0.10)	1.2 (0.27)	1.43 (0.23)

Panel B. Social Behavior and Feelings of Safety

	There is gang activity in my school	Students threaten or bully other students at school	Students get into physical fights at my school
Small New school	0.075	0.061	0.020
	(0.09)	(0.08)	(0.10)
Small Old school	-0.280**	-0.229*	-0.301*
	(0.13)	(0.14)	(0.16)
T-test –small new=small old (p-value)	4.98 (0.03)	4.01 (0.05)	3.07 (0.08)

Notes: Small schools defined as schools with less than 550 enrolled. Small New schools are small schools opened in or after 2003. There are 25,556 observations. Rob. std. errors are presented in parentheses, clustered by high school. For questions in Expectation, Connectedness and columns 1 and 2 of Safety category, dependent variable equal to 1 if student responded "Agree" or "Strongly Disagree" to each statement. For the Peer victimization and columns 3 of Safety category, dependent variable equal to 1 if student responded "All of the Time" or "Most of the time" to each statement. IVs: Minimum distances to Small New, Small Old and Large school. All models include the following student controls: a measure of the school's learning environment in 8^{th} grade, indicators for female, black, Hispanic, Asian; native born; home language is English, free lunch eligibility, Math and English z-scores in 8^{th} grade

Table 10. Robustness Check: IV results of effect of small new and small old schools on perceptions of learning environment (IVs used: attendance rate and grade span)

Panel A. Interpersonal Relationships

	Most adults I see at school every day know my name or who I am	The adults at my school look out for me	Most students in my school help and care about each other
Small New school	0.254*	0.049	-0.414**
	(0.14)	(0.14)	(0.18)
Small Old school	0.378***	0.319**	0.345
	(0.14)	(0.13)	(0.22)

Panel B. Expectations and Support

	My teachers encourage me to succeed	My teachers expect me to continue my education after high school	My school helps me to develop challenging academic goals
Small New school	-0.115	-0.099	-0.277*
	(0.10)	(0.10)	(0.14)
Small Old school	0.233*	0.277**	0.403**
	(0.13)	(0.11)	(0.20)

Panel C. Social Behavior and Feelings of Safety

	I am safe in my classes	I am safe in the hallways, bathrooms, and locker rooms at my school	I stay home because I don't feel safe at school
Small New school	-0.219*	-0.095	-0.005
	(0.12)	(0.12)	(0.06)
Small Old school	0.265**	0.394***	-0.199***
	(0.13)	(0.15)	(0.07)

Panel D. Social Behavior and Feelings of Safety

	There is gang activity in my school	Students threaten or bully other students at school	Students get into physical fights at my school
Small New school	0.123	0.148	0.133
	(0.15)	(0.12)	(0.17)
Small Old school	-0.576***	-0.328**	-0.623***
	(0.18)	(0.14)	(0.20)
Observations	20940	20940	20940

Notes: Small schools defined as schools with less than 550 enrolled. Small New schools are small schools opened in or after 2003. There are 25,556 observations. Rob. std. errors are presented in parentheses, clustered by high school. For questions in Expectation, Connectedness and columns 1 and 2 of Safety category, dependent variable equal to 1 if student responded "Agree" or "Strongly Disagree" to each statement. For the Peer victimization and columns 3 of Safety category, dependent variable equal to 1 if student responded "All of the Time" or "Most of the time" to each statement. IVs: Student's attendance rate in 7th grade and grade span of school attended in 4th grade. All models include the following student controls: a measure of the school's learning environment in 8th grade, indicators for female, black, Hispanic, Asian; native born; home language is English, free lunch eligibility, Math and English z-scores in 8th grade

Table 11. Robustness Check: IV results of effect of small new and small old schools on perceptions of learning environment, Cohorts 2009 and 2010)

Panel A. Interpersonal Relationships

	Most adults I see at school every day know my name or who I am		The adults at my school look out for me		Most students in my school help and care about each other	
	OLS	IV	OLS	IV	OLS	IV
Small New	0.216***	0.465***	0.126***	-0.014	0.070***	-0.545
school*2009	(0.01)	(0.16)	(0.01)	(0.17)	(0.02)	(0.34)
Small New	0.197***	0.144	0.115***	-0.014	0.058***	-0.234
school*2010	(0.01)	(0.14)	(0.01)	(0.16)	(0.01)	(0.22)
Small Old	0.159***	0.097	0.080***	0.342*	0.066***	0.852*
school*2009	(0.02)	(0.15)	(0.02)	(0.18)	(0.02)	(0.46)
Small Old	0.147***	0.354***	0.098***	0.304**	0.079***	0.482*
school*2010	(0.01)	(0.13)	(0.01)	(0.15)	(0.02)	(0.25)

Panel B. Expectations and Support

	My teachers encourage me to succeed		My teachers expect me to continue my education after high school		My school helps me to develop challenging academic goals	
	IV	OLS	IV	OLS	IV	OLS
Small New	0.033***	-0.039	0.041***	0.056	0.041***	0.037
school*2009	(0.01)	(0.13)	(0.01)	(0.09)	(0.01)	(0.17)
Small New	0.036***	0.091	0.038***	0.096	0.048***	0.016
school*2010	(0.01)	(0.11)	(0.01)	(0.08)	(0.01)	(0.16)
Small Old	0.026***	0.301**	0.025***	0.113	0.020	0.408**
school*2009	(0.01)	(0.14)	(0.01)	(0.10)	(0.02)	(0.19)
Small Old	0.037***	0.128	0.032***	0.072	0.030**	0.246**
school*2010	(0.01)	(0.09)	(0.01)	(0.07)	(0.01)	(0.12)
Observations	46879.0	46879.0	46879.0	46879.0	46879.0	46879.0

Panel C. Social Behavior and Feelings of Safety

	I am safe in my classes		I am safe in the hallways, bathrooms, and locker rooms at my school		I stay home because I don't feel safe at school	
	OLS	IV	OLS	IV	OLS	IV
Small New	0.030***	-0.275*	0.070***	-0.442	-0.007	0.028
school*2009	(0.01)	(0.16)	(0.01)	(0.27)	(0.00)	(0.07)
Small New	0.026***	-0.238*	0.058***	-0.308	-0.009**	-0.026
school*2010	(0.01)	(0.14)	(0.01)	(0.22)	(0.00)	(0.06)
Small Old	0.017	0.304	0.071***	0.693**	0.000	-0.118
school*2009	(0.01)	(0.19)	(0.02)	(0.34)	(0.01)	(0.07)
Small Old	0.020*	0.221	0.058***	0.396*	-0.008	-0.036
school*2010	(0.01)	(0.15)	(0.02)	(0.22)	(0.00)	(0.05)

Panel D. Social Behavior and Feelings of Safety

	There is gang activity in my school		Students threaten or bully other students at school		Students get into physical fights at my school	
	OLS	IV	OLS	IV	OLS	IV
Small New	-0.070***	0.613**	-0.047***	0.449**	-0.082***	0.350
school*2009	(0.01)	(0.28)	(0.01)	(0.22)	(0.02)	(0.24)
Small New	-0.074***	0.194	-0.040***	0.245	-0.081***	0.179
school*2010	(0.01)	(0.19)	(0.01)	(0.18)	(0.02)	(0.21)
Small Old	-0.055***	-0.678**	-0.024	-0.491*	-0.070***	-0.446*
school*2009	(0.02)	(0.34)	(0.02)	(0.28)	(0.02)	(0.26)
Small Old	-0.069***	-0.278	-0.047***	-0.251	-0.085***	-0.280
school*2010	(0.01)	(0.18)	(0.01)	(0.18)	(0.02)	(0.21)
Observations	46879	46879	46879	46879	46879	46879

Notes: Small schools defined as schools with less than 550 enrolled. Small New schools are small schools opened in or after 2003. There are 25,556 observations. Rob. std. errors are presented in parentheses, clustered by high school. For questions in Expectation, Connectedness and columns 1 and 2 of Safety category, dependent variable equal to 1 if student responded "Agree" or "Strongly Disagree" to each statement. For the Peer victimization and columns 3 of Safety category, dependent variable equal to 1 if student responded "All of the Time" or "Most of the time" to each statement. IVs: Minimum distance to Small New, Small Old and Large school multiplied by Cohort 2009 and Cohort 2010. All models include the following student controls: a measure of the school's learning environment in 8^{th} grade, indicators for female, black, Hispanic, Asian; native born; home language is English, free lunch eligibility, Math and English z-scores in 8^{th} grade

Table 12. Robustness Check: IV results of effect of small new and small old schools on perceptions of learning environment (small schools:650 students or less)

Panel A. Interpersonal Relationships

	Most adults I see at school every day know my name or who I am	The adults at my school look out for me	Most students in my school help and care about each other
Small New school	0.078	-0.054	-0.182
	(0.19)	(0.19)	(0.26)
Small Old school	0.452*	0.361	0.482
	(0.24)	(0.25)	(0.32)

Panel B. Expectations and Support

	My teachers encourage me to succeed	My teachers expect me to continue my education after high school	My school helps me to develop challenging academic goals
Small New school	0.009	-0.032	-0.130
	(0.13)	(0.12)	(0.20)
Small Old school	0.350*	0.317*	0.339
	(0.19)	(0.16)	(0.28)

Panel C. Social Behavior and Feelings of Safety

	I am safe in my classes	I am safe in the hallways, bathrooms, and locker rooms at my school	I stay home because I don't feel safe at school
Small New school	-0.306	-0.381	-0.045
	(0.22)	(0.29)	(0.06)
Small Old school	0.314	0.395	-0.109
	(0.27)	(0.38)	(0.09)

Panel D. Social Behavior and Feelings of Safety

	There is gang activity in my school	Students threaten or bully other students at school	Students get into physical fights at my school
Small New school	0.153	0.251	0.259
	(0.20)	(0.23)	(0.29)
Small Old school	-0.312	-0.347	-0.515
	(0.25)	(0.28)	(0.38)

Notes: Small schools defined as schools with less than 650 enrolled. Small New schools are small schools opened in or after 2003. Rob. std. errors are presented in parentheses, clustered by high school. For questions in Expectation, Connectedness and columns 1 and 2 of Safety category, dependent variable equal to 1 if student responded "Agree" or "Strongly Disagree" to each statement. For the Peer victimization and columns 3 of Safety category, dependent variable equal to 1 if student responded "All of the Time" or "Most of the time" to each statement. IVs: Minimum distance to Small New, Small Old and Large school multiplied by Cohort 2009 and Cohort 2010. All models include lagged values of the dependent variable in question and the following student controls: a measure of the school's learning environment in 8^{th} grade, indicators for female, black, Hispanic, Asian; native born; home language is English, free lunch eligibility, Math and English z-scores in 8^{th} grade

Table 13. School Characteristics, OLS regression results

	Turnover	Turnover w/less than 5 years experience	% Master or More	% Less than 3 years experience	% No appropriate Certification	% No Valid Certification	Pupil-teacher	$ All Expenses	$ Direct expenses	$ Classroom instruction	$ Teachers in Classroom instruction
Small New school	4.416***	1.927	-22.617***	16.520***	3.706***	1.623***	-3.747***	652.583**	668.973**	171.053	-6.410
	(1.31)	(2.30)	(1.66)	(1.60)	(0.95)	(0.47)	(0.41)	(271.45)	(270.58)	(145.16)	(113.07)
Small Old school	1.441	3.018	-11.782***	4.433***	1.386	-0.111	-3.329***	1793.735***	1771.547***	813.109***	601.206***
	(1.34)	(2.59)	(1.78)	(1.35)	(0.95)	(0.49)	(0.45)	(327.68)	(325.95)	(173.91)	(135.86)
R-sqr	0.179	0.101	0.466	0.279	0.105	0.148	0.285	0.275	0.269	0.246	0.181
observations	353	351	375	375	375	375	359	364	364	364	364
F-test (Small old=Small new)	4.98**	0.25	44.39***	56.13***	5.36**	9.22***	0.78	12.98***	12.17***	14.40***	20.77***

Notes: Small schools defined as schools with less than 650 enrolled. There are 25,556 observations. Small New schools are small schools opened in or after 2003. Rob. std. errors are presented in parentheses, clustered by high school. All models include average student controls and the following student controls: share of females, blacks, Hispanics, Asians; share of native born and students whose home language is English and are eligible for free lunch, Math and English z-scores in 8^{th} grade

Appendix
Instrument Validity

Correlations between Mean Student Characteristics and Distance to Small, Small New and Small Old school, by Residence Zip Code

	Minimum distance to Small school	**Minimum distance to New Small school**	**Minimum distance to Old Small school**
	(1)	**(2)**	**(3)**
Minimum distance to Large school	0.345***	0.336***	0.596***
	(0.09)	(0.09)	(0.13)
Female	0.814	0.786	1.790**
	(0.51)	(0.50)	(0.83)
Asian	1.030	1.050*	-1.334*
	(0.64)	(0.61)	(0.80)
Black	-0.244	-0.215	-1.867**
	(0.57)	(0.56)	(0.80)
Hispanic	-0.133	-0.117	-0.996
	(0.60)	(0.60)	(0.91)
Native Born	0.245	0.263	-1.198*
	(0.49)	(0.49)	(0.63)
English not spoken at home	0.700*	0.706*	-0.402
	(0.39)	(0.39)	(0.62)
LEP	3.473	3.445	1.688
	(2.18)	(2.17)	(3.06)
Overage	2.574	2.471	6.569**
	(2.31)	(2.25)	(2.85)
Free lunch	-1.456***	-1.466***	0.702
	(0.52)	(0.52)	(0.86)
8th grade Reading z-score	0.508*	0.498	0.626
	(0.30)	(0.31)	(0.40)
8th grade Math z-score	-0.048	-0.053	0.326
	(0.29)	(0.29)	(0.30)
Brooklyn	0.251	0.233	1.212***
	(0.19)	(0.19)	(0.36)
Manhattan	-0.228	-0.230	0.145
	(0.22)	(0.22)	(0.29)
Queens	0.432**	0.410**	1.396***
	(0.21)	(0.20)	(0.35)
Minimum distance to Old Small school		0.015	
		(0.07)	
Minimum distance to New Small school			0.033
			(0.14)
Constant	0.042	0.041	0.096
	(0.70)	(0.71)	(1.10)
	0.571	0.572	0.565
Observations	169.0	169.0	169.0

Table 2. Student Survey Questions

1) **Interpersonal relationships: feelings of connectedness and respect**

How much do you agree or disagree with the following statements about your teachers?
Teachers in my school treat students with respect.
Most students in my school treat teachers with respect.
Adults in my school treat each other with respect.
My teachers enjoy the subjects they teach.
My teachers inspire me to learn.
My teachers give me extra help when I need it.
My teachers connect what I am learning to life outside of the classroom.

How much do you agree or disagree with the following statements about students in your school?
Most students in my school help and care about each other.
Most students in my school just look out for themselves.
Most students in my school treat each other with respect.
Students with disabilities are included in all school activities.

How much do you agree or disagree with the following statements about your school?
I feel welcome in my school.
Most of the teachers, counselors, school leaders, and other adults I see at school every day know my name or who I am.
The adults at my school look out for me.

2) **Academic support and motivation**

How much do you agree or disagree with the following statements about being successful at your school?
The adults at my school help me understand what I need to do to succeed in school.
My teachers encourage me to succeed.
I need to work hard to get good grades at my school.
Students who get good grades in my school are respected by other students.
My school helps me to develop challenging academic goals.
Someone at my school helps me understand what courses I need to be promoted to the next grade or graduate.
My teachers expect me to continue my education after high school.
Someone at my high school can talk with me about my plans after high school.
My high school provides helpful counseling on how to get a good job after high school or how to get into college.

On a scale of 1 to 4, how COMFORTABLE are you talking to teachers and other adults at your school about:
a problem you are having in a class?
something that is bothering you?

On a scale of 1 to 4, how AVAILABLE are teachers and other adults at your school to talk about:
a problem you are having in a class?
something that is bothering you?

3) **Students' perception about team work and type of school work**

Approximately how often, during this school year, have your teachers asked you to:
Complete an essay or research project using multiple sources of information?

Complete an essay or project where you had to use evidence to defend your own opinion or ideas?

In how many of your classes during the past two weeks have you:

worked by yourself (independently) during class?
worked in groups of 2 to 6 students?
had whole-class discussions?
participated in hands-on activities such as science experiments?

4) Participation in different activities

During this school year, have you taken or had a chance to take a class in the following subjects?

Art
Music
Dance
Theater
Foreign Language
Computer Skills/Technology
Health
Physical Education

During this school year, which of the following activities did you participate in either before or after school or during free periods?

Art
Music
Dance
Theater
Foreign Language
Computer Skills/Technology
School Sports Teams or Clubs
Tutoring/Enrichment Activities

How much do you agree or disagree with the following statement?

My school offers a wide enough variety of classes and activities to keep me interested in school.

5) Social Behavior and Safety

How often are the following things true about you or about your school?

I stay home because I don't feel safe at school.
Students threaten or bully other students at school.
Students get into physical fights at my school.
Adults at my school yell at students.
Students in my school are harassed or threatened based on race, color, creed, ethnicity, national origin, citizenship/immigration status, religion, gender, gender identity, gender expression, sexual orientation or disability.
Students use alcohol or illegal drugs while at school.
There is gang activity in my school.

How much do you agree or disagree with the following statements about your school?

There is a person or program in my school that helps students resolve conflicts.
Discipline in my school is fair.
I am safe in my classes.
I am safe in the hallways, bathrooms, and locker rooms at my school.
I am safe on school property outside my school building.
My school is kept clean.
Answer this question only if your school has School Safety Agents: The presence and actions of School Safety Agents help to promote a safe and respectful learning environment.

Robustness Check: IV results of effect of small new and small old schools on perceptions of learning environment (excluding selective schools)

Panel A. Interpersonal Relationships

	Most adults I see at school every day know my name or who I am	The adults at my school look out for me	Most students in my school help and care about each other
Small New school	0.179	-0.013	-0.122
	(0.16)	(0.15)	(0.20)
Small Old school	0.313***	0.261*	0.503**
	(0.11)	(0.13)	(0.20)

Panel B. Expectations and Support

	My teachers encourage me to succeed	My teachers expect me to continue my education after high school	My school helps me to develop challenging academic goals
Small New school	-0.144	0.053	0.080
	(0.18)	(0.10)	(0.10)
Small Old school	0.229	0.159*	0.092
	(0.14)	(0.08)	(0.07)

Panel C. Social Behavior and Feelings of Safety

	I am safe in my classes	I am safe in the hallways, bathrooms, and locker rooms at my school	I stay home because I don't feel safe at school
Small New school	-0.366*	-0.419	-0.054
	(0.22)	(0.29)	(0.08)
Small Old school	0.259	0.374	-0.013
	(0.20)	(0.25)	(0.06)

Panel D. Social Behavior and Feelings of Safety

	There is gang activity in my school	Students threaten or bully other students at school	Students get into physical fights at my school
Small New school	0.188	0.227	0.156
	(0.18)	(0.20)	(0.22)
Small Old school	-0.287*	-0.282	-0.283
	(0.16)	(0.18)	(0.21)
Observations	22925	22925	22925