

Gender Sorting Across K-12 Schools in the United States

Mark C. Long
University of Washington
Daniel J. Evans School of Public Affairs
Box 353055
Seattle, WA 98195-3055
206-543-3787
marklong@u.washington.edu

Dylan Conger
The George Washington University
Trachtenberg School of Public Policy and Public Administration
805 21st Street NW, MPA 601G
Washington, DC 20052
202-994-1456
dconger@gwu.edu

Acknowledgements: We thank Charles Clotfelter, Laura Evans, Dani Fumia, Dan Goldhaber, Jason Grissom, Eric Grodsky, Charlie Hirschman, Chris Jepsen, Teny Maghakian, Paco Martorell, Marta Tienda, Will Tyson, Joel Vargas, Gerald LeTendre (Editor), three anonymous reviewers, and participants at the annual meetings of the Association for Public Policy Analysis and Management, Association for Education Finance and Policy, and the Western Economic Association International for helpful comments; Matt Dunbar for help with GIS analysis; and Jason Williams, Nick Chandler-Klein, and Keisha Childers for excellent research assistance. Partial support for this research came from a *Eunice Kennedy Shriver* National Institute of Child Health and Human Development research infrastructure grant, R24 HD042828, to the Center for Studies in Demography & Ecology at the University of Washington. We (Conger and Long) contributed equally in the preparation of this manuscript.

Gender Sorting Across K-12 Schools in the United States

Abstract: This paper documents evidence of non-random gender sorting across K-12 schools in the U.S. The sorting exists among coed schools and at all grade-levels, and it is highest in the secondary school grades. We observe some gender sorting *across* school sectors and types: for instance, males are slightly under-represented in private schools and charter schools, and substantially over-represented in irregular public schools, a large share of which educate students with special needs and juvenile justice involvement. Gender sorting *within* sectors and types is also quite prevalent and appears to be highest within the private schools (where single-sex schools are more common) and irregular public schools. We find that gender sorting is higher in counties that have higher shares of enrollment in private and non-regular public schools. This sorting occurs even though parents have similar stated preferences for school attributes for their sons and daughters.

Keywords: Gender disparities, school choice

Gender Sorting Across K-12 Schools in the United States

1. Introduction

Social science researchers have documented the magnitudes, causes, and consequences of racial and socioeconomic sorting of students across U.S. schools for decades. In contrast, very little attention has been paid to the sorting of males and females across schools. This gap in the literature thus far exists for understandable reasons. Unlike racial and socioeconomic sorting which are fostered by discrimination and limited economic mobility, it's not clear that any injustices exist when males and females opt for different schooling environments. Modern-day gender disparities in educational outcomes among U.S. students also tend to be smaller than racial and socioeconomic disparities. In addition, single-sex schooling is somewhat uncommon in the U.S., particularly in public schools, providing researchers with few reasons to investigate gender sorting in the public school system.

Yet recent educational trends suggest that perhaps more attention should be paid to the gender composition of the nation's schools. To begin, U.S. girls are now outperforming boys in many aspects of educational performance. Girls have higher reading achievement in all grades (but lower math achievement after kindergarten) (Fryer and Levitt 2010; Robinson and Lubienksi 2011), are more likely to graduate high school (Heckman and LaFontaine, 2010), take more rigorous high school courses (Conger and Long 2010; Peter and Horn 2005; Riegle-Crumb 2010), and are more likely to attend and complete college (Conger and Long 2010; Dynarski 2007). There is also some evidence that several of these gender gaps are widening (Hussar and Bailey 2011). Research that attempts to explain these female academic advantages often point to girls' higher performance in non-cognitive areas, such as organization, self-discipline, attentiveness, dependability, and seeking help from others, which can translate into higher

parental, peer and teacher expectations (DiPrete and Jennings 2012; Jacob 2002; Reynolds and Burge 2008; Riegle-Crumb 2010).

Even if these gender gaps in achievement are not of great concern to educators and academics, given the advantage that females have in many academic areas, public and private schools seeking to improve their school-wide achievement measures might benefit from simply recruiting and/or admitting more female students. Schools that are governed by state and federal accountability policies might seek to improve their accountability scores by attracting more female students or, for those that are able to choose students, deliberately considering gender in the selection process.

In addition, recent amendments to Title IX provide public schools and school districts greater flexibility in offering single-sex classrooms and schools, and recent evidence suggests that such gendered schooling contexts are on the rise (Schemo 2006; USDOE 2008). Several recent studies on peer effects also demonstrate that the gender composition of students' schools and classrooms can influence their achievement and attainment (Hoxby 2000; Lavy and Schlosser 2011; Whitmore 2005). Proponents of single sex schooling have long held that boys and girls learn differently and that coeducational schooling environments can inhibit learning and reinforce gender stereotypes by, for instance, steering girls away from science and technology and steering boys away from arts, music, and dance (National Association for Single Sex Public Education, 2012). Observations of classrooms also reveal that male students are often more vocal and distracted than female students, which can occupy teacher time and detract from the learning environment (Younger, Warrington, and Williams 1999). More disruptive boys could also impact the patience and instructional ability of the teacher as well as the behavior of the other students (both boys and girls) in the schooling environment. At least one observational

study suggest that the group most harmed by the presence of boys may be boys themselves: in integrated classrooms, teachers have been observed to respond more positively to the less disruptive girls and interact with them in ways that support their learning (Younger et al. 1999). The few studies that attempt to quantify the effect of male peers in U.S. classrooms and schools on student achievement primarily find negative effects (Hoxby 2000; Whitmore 2005). Thus, if boys and girls attend different schools, even if the quality of the teachers and demographic composition of the students are equal, the greater exposure of boys to other boys could lower their achievement.

Further, even if girls do not make for better peers, variations in the characteristics of the schools that males and females attend could matter to their educational outcomes. If, for instance, females over-sort into schools with higher-quality teachers and stronger academic programs, such enrollment patterns could widen gender disparities in academic outcomes. Consistent with this hypothesis, we find that differences in the public high schools attended by boys and girls in Florida explain 11% of the gender gap in their likelihood of college enrollment (Authors, 2012).

These findings call for a thorough empirical examination of the degree to which boys and girls sort across schools in the U.S. and the variation in the magnitude of the sorting across grade-levels, school types, and communities. This paper provides, to our knowledge, the first such inquiry. Using multiple sources of data on schools, students, and guardians, we examine the severity and patterns of gender sorting across K-12 schools in the U.S. Specifically, we answer the following questions: (1) What is the magnitude of gender sorting across schools and how does it vary by grade level?; (2) How does gender sorting vary across school sectors (private, public) and types (e.g., magnet, charter)?; (3) How does gender sorting across schools vary

across counties in the U.S. and how much of the variation across counties is attributed to the extent of local school choice options?; and (4) Do guardians report different preferences for school attributes based on the gender of their children? Our answers to these four questions provide insight into the magnitude of gender sorting and shed some light on its sources.

We document a non-trivial amount of gender sorting across schools that has as yet gone unnoticed. This gender sorting is substantially (and statistically significantly) greater than what would be observed if boys and girls were randomly allocated to their schools. In addition, we document wide variation in gender sorting across counties in the U.S. that can be linked to the availability of school enrollment choices. Finally, an investigation into the stated preferences of parents provides limited evidence to explain why the sorting exists.

The paper is organized as follows. Section 2 describes the relevant literatures. Section 3 describes the data sources and methods. Section 4 provides the results and Section 5 provides a discussion and conclusion.

2. Literature Review

Though we know of no study that examines the distribution of males and females across all schools in the U.S., there are a handful of studies that provide some evidence of gender sorting across sectors and types. Several studies find that girls disproportionately enroll in charter schools and that the disparities are larger in secondary school than in earlier grades (Abdulkadirogu et al. 2009; Booker et al. 2009; Corcoran and Jennings 2011; Hoxby and Muraka 2007). Further, given males disproportionate enrollment in special education (Hibel, Farkas, and Morgan 2010) and in the juvenile justice system (Tracy, Kempf-Leonard, and Abramoske-James 2009), we expect higher gender sorting when public schools that serve these populations

(referred to below as “irregular” public schools) are included with regular public schools. Given that students' preferences for school characteristics and knowledge of schooling options likely increase as they age, we also expect to see gender sorting increase with grade level as older students assert their preferences and bargain with their parents.

The degree of gender sorting within one sector or type will also likely influence the degree to which it is observed in another type at the local level. Private, charter, and magnet schools may be more or less suited for children based on gender, which will affect the gender ratio of students' in the remaining school types. For instance, an all-girls private school could lead to a higher share of males in the local public school. Consequently, we expect that more local school options will increase the capacity for parents and students to make differential enrollment decisions based on the student's gender and lead to higher levels of gender sorting across schools of all types.

As for why gender sorting might exist, we have only limited information in the existing literature from which to draw. Surveys of parents choosing schools indicate that they consider a number of characteristics, such as student achievement, proximity to home, teacher quality, school safety, extra-curricular activities, athletics programs, and the composition of the student body (Rose 2001). In addition, we know that parent characteristics (such as education and race/ethnicity) affect the kind of information that parents have access to and how they use the information to make their choices (Henig 1994; Petroni 1996; Piché and Taylor 2004; Robenstine 2001; Schneider, Teske, and Marschall 2000). Though most of the school choice literature has focused on across-family differences, there is some evidence that parents also evaluate schools differently depending upon the gender of their child (David 1997; Jackson and Bisset 2005) and that boys and girls of secondary school age evaluate schools differently

(Hastings, Kane, and Staiger 2006). In their study of the effects of the Charlotte-Mecklenburg school choice program, Hastings et al. (2006) find, for instance, that white females are more likely than white males to enroll in academically-focused schools. Based on survey data from the United Kingdom, David (1997) finds that parents of girls were more likely to state preferences for single-sex schools, while parents of boys were more likely to consider the facilities available in coed schools in making their choices. Likewise focusing on UK schools, Jackson and Bisset (2005) find that parents often assume that single-sex schools are better for girls than they are for boys because boys are thought to dominate classroom interactions, and thus prefer same-sex schools for their daughters.

Given this evidence of gendered preferences, gender sorting across schools could result from parents choosing different schools for their daughters and sons (within-family sorting) or from across-family sorting if families with only sons are more inclined to send their boys to private schools while families with only daughters are more inclined to send their girls to the local public school. Sorting by gender could be driven by tastes for same-sex peers or by the characteristics of schools that are correlated with one gender (e.g., a science and tech school may draw a disproportionate share of males).

3. Data and Methods

3a. Data Sources

We rely on three data sources for our analyses. To examine the magnitude of gender sorting in each K-12 grade within the public and private school systems, we use two data sources maintained by the U.S. Department of Education. The first is the 2007-08 Common Core of Data Public Elementary/Secondary School Universe Survey (CCD), which contains enrollment

counts by gender and grade for the census of public schools in the U.S. We restrict our analysis to schools in the 50 states plus the District of Columbia. Very few public schools are missing enrollment counts (ranging from 0.009% for schools offering 2nd grade to 0.035% for schools offering 12th grade). We drop from our analysis schools that only have ungraded students (229,528 students) and include schools with graded students (47,207,507 students in K-12). The CCD distinguishes among schools according to whether they are regular, special education, vocational, or other/alternative (e.g., juvenile justice school). We group the latter three categories together and refer to them as "irregular" public schools. Schools are also separately identified according to whether they are charter¹ or magnet² schools. Irregular, magnet, and charter designations are not mutually exclusive. That is, some schools are designated as both a magnet and a charter school, etc. Further, magnet and charter schools can be either regular or irregular. Thus, when we restrict the analysis to just magnet schools, as we do in the fourth row

¹ Defined as a "A school that provides free elementary and/or secondary education to eligible students under a specific charter granted by the state legislature or other appropriate authority." (Chen, 2011, p. A-5).

² Defined as "Regardless of the source of funding, a magnet school or program is a special school or program designed to attract students of different racial/ethnic backgrounds for the purpose of reducing, preventing, or eliminating racial isolation and/or to provide an academic or social focus on a particular theme" (Chen, 2011, p. A-5). A number of states did not report the magnet status of their schools to CCD in 2007-08 (including AZ, HI, IA, MA, MT, NE, NH, NJ, OH, OK, OR, RI, SD, TX, VT, WA, WV, WY) despite the fact that many if not all of these states contain magnet schools ("Magnet" is in the name of schools in AZ, MA, NE, NJ, OR, TX).

in Table 2 for example, this set of schools will include regular and irregular schools, as well as charters and non-charters.

The second source of data is the 2007-08 Private School Universe Survey (PSS), which contains enrollment counts for most private schools in the country.³ Though the PSS provides the total number of males and females in the school as well as the number of students in each grade, it does not provide the gender breakdown of students within each grade. To overcome this limitation, we impute the gender composition of each grade by randomly allocating males and females across the grades such that the school-level enrollment of males and females as well as the grade-level enrollments match those recorded in the PSS.⁴ This procedure assumes no gender sorting across grades within a private school (except that which would occur by chance) and, consequently, yields conservative estimates of grade-level gender sorting within private schools. Differences in the magnitudes of gender sorting across grades will only be driven by gender sorting across schools that offer certain grades (for instance, if K-2 schools are

³ 2007-08 is the most recent year available for the PSS. Broughman et al. (2009) report that the weighted survey response rate was 91.1%. We use the weights supplied by the U.S. Department of Education to make the PSS sample representative of all private schools. Using these weights, we find that 84% of private schools (enrolling 88% of private school students) are included as survey respondents.

⁴ For example, suppose a school contains 40 males, 60 females, 55 kindergarteners, and 45 first graders. To estimate the number of males and females in each grade, we first create a fictional dataset composed of 40 males and 60 females. We then randomly draw a fictional student from this dataset (without replacement) and randomly place him or her into either kindergarten or first grade (stopping with enrollment counts of 55 and 45 in these grades).

disproportionately female, we may observe higher rates of gender sorting in these early grades relative to later grades).

Both the CCD and the PSS provide the address of each school, which allows us to measure the number and type of schools located in each county as well as the amount of across-school gender sorting within each county in the U.S.

Our third source of data, which we use to examine whether guardians' preferences for schools vary by the gender of their children, is the Parent and Family Involvement in Education (PFI) portion of the 2007 National Household Education Survey (NHES). The NHES is a random-digit telephone survey of guardians conducted by the U.S. Department of Education. The 2007 survey includes responses from guardians in 10,633 households regarding 10,681 children, and the PFI portion of the survey includes several questions about the information that guardian's collect and consider in choosing schools for their children.

3b. Methods

We measure the unevenness in the distribution of boys and girls across schools with the standard deviation in schools' male share of enrollment. As with all measures of unevenness, we note that even if students were randomly assigned to their schools, the expected value of our measure is likely to be non-zero due to the natural features of randomness. That is, only a deliberate effort to achieve perfect gender balance would result in evenly distributed schools, while a random allocation process is likely to deviate slightly from a perfectly even distribution. Moreover, a random allocation process will yield a higher standard deviation in male share in sectors, grades, and geographic areas with smaller grade-level enrollments. Notably, the average size of private

schools is much smaller than that of public schools, which will increase the standard deviation in male share even if there is no systematic sorting.

To quantify the amount of sorting that appears to be driven by non-random forces, we compute the standard deviation in male share that would occur if students were randomly assigned to their schools. Holding school sizes fixed at their actual values, we randomly allocate students to schools in 100 Monte Carlo simulations and report the mean of the standard deviation in male share that results from the simulations.⁵ We then compute the "residual sorting" as the difference between the true standard deviation and the mean standard deviation from the 100 simulations. In addition to accounting for natural drivers of sorting, this residual adjusts for the fact that sorting will be mechanically higher in geographic areas and school types with smaller schools. We examine the amount of residual sorting for all schools, then separately for schools that are private, regular public, irregular public, magnet, and charter.

Finally, to examine the variation in across-school gender sorting by county, we compute a measure of residual sorting for each of the 2,963 counties in the U.S. in 2007-08. That is, for each county, we compute the actual level of gender sorting, the amount of gender sorting that would occur under a random allocation of students (based on the average of 10 Monte Carlo simulations for each county), and the difference between the two (the residual). We drop from the analysis counties that offer only one school for a given grade as there can be no gender sorting for that grade in the county. In addition to mapping and examining the variation in gender sorting across counties, we explore the relationship between the local school choice

⁵ Conger (2005) uses a similar procedure to identify within school racial sorting across classrooms.

options (the share of students in various school types) and the magnitude of residual sorting across counties.

4. Results

4a. Across-school Gender Sorting by Grade Level

Table 1 provides the characteristics and amount of gender sorting across all schools in the nation in 2007-08 by grade-level. Approximately 4 million students were enrolled in each grade, with the highest enrollments in the 9th grade (over 4.5 million students), which reflects the high grade retention rates of 9th graders. Middle and secondary schools are also smaller in number and larger in size than elementary schools on average. Column (4) provides the male share of each grade, which peaks at 51.9% in the 9th grade due to higher grade retention rates among males (Heubert and Hauser, 1999) and falls to 50.0% in 12th grade given higher high school dropout rates among males (Heckman and LaFontaine, 2010). Note that our analysis of across-school gender sorting within each grade-level will not be influenced by the variation in the male share across grades (which is driven by gender differences in enrollments, not school sorting).

[INSERT Table 1]

Beginning with Column (5), the table provides the first of several statistics that measure the magnitude of gender sorting across schools by grade-level. Column (5) shows the standard deviation in the male share across schools for each grade, which ranges from a low of 7.4 percentage-points in the 8th grade to a high of 10 percentage-points in kindergarten. As explained above, the observed variation in the male share is driven by true systematic sorting of males of females as well as the non-systematic sorting that mechanically increases in grades where the schools are smaller. To isolate the portion of the total sorting that is due to non-

random and non-mechanical influences, we provide the mean standard deviation obtained from our 100 simulations of allocating students randomly to their schools in Column (6). As expected, the mean standard deviation in the randomly sorted simulations falls from the 5th to the 6th grade, and again from the 8th to the 9th grade, due to the larger average enrollments of middle and secondary schools. Column (7) provides the percentage-point difference and Column (8) provides the percent difference between the actual and randomly-simulated deviations and reveals large differences, particularly in the high school grades where the actual sorting is more than double what would be expected by chance. In the high school grades, the actual deviation is 5 percentage-points higher (and over 100% higher) than the deviation from the random distribution.⁶ For each grade level K-12, the standard deviation of male share in the randomly sorted data was less than the standard deviation of male share in the actual distribution in all 100 iterations. In other words, the p-value for a one-tailed test of the hypothesis that the random allocation is greater than actual allocation is 0% for all grades, indicating that the non-random gender sorting is statistically significant at all conventional levels of significance.

The last column of Table 1 (Column 9) reveals that a small percentage of schools in the U.S. are single-sex schools, and that most of them serve the high school grades. In results not shown in Table 1 but available upon request, we examine the degree of residual sorting for each

⁶ In results not shown (but available on request) we find a very similar pattern when we compute the Index of Dissimilarity using the actual enrollment data and compare it to the Index of Dissimilarity using the randomly-sorted simulated data. The actual Index of Dissimilarity in the high school grades is 3-4 percentage-points higher than the Index of Dissimilarity computed from the random distribution, indicating that 3-4 percent of boys (or girls) would need to change high schools to produce the gender distribution that we would expect by chance.

grade when single sex schools are removed from the analysis. We find that the amount of residual sorting in the high school grades is cut in half (for example, from 106% to 50% for the 12th grade), which suggests that a bit more than half of the sorting observed in these grades is due to single-sex schools. The remaining residual sorting demonstrates that a non-trivial amount of gender sorting also exists across coed schools. Across all coed high schools, the standard deviation of male share in the actual distribution of students is between 46% and 50% higher than expected based on the random distribution.

4b. Gender Sorting Within and Across School Types

For our next analysis, we examine the degree to which males and females sort across sectors and school types as well as the magnitude of the sorting that occurs within sector and type. Table 2 provides the descriptive and sorting statistics for schools that are private, regular public, irregular public, magnet, and charter. To conserve space, we provide figures only for grades kindergarten, 3, 6, 9, and 12 (analyses for other grades are similar to those reported in Table 2 and can be obtained upon request).

Columns (1), (2), and (3) of Table 2 reveals the wide variation in the size and number of students enrolled in schools from each type. Irregular public, charter, and private schools tend to be smaller than regular public and magnet schools, with magnet schools showing very high enrollments per school in the high school grades.

[INSERT Table 2]

Column (4) reveals substantial gender sorting across sectors and school types. At each grade-level, irregular public schools tend to enroll the highest percentage male, while private schools tend to enroll the lowest percentage male. In kindergarten, for instance, 55.3% of all

students in irregular public schools are male compared to only 38.8% of all students in private schools. We remind the reader that we imputed the grade-level male share for private schools based on the enrollments of each grade and the total male share in each school. The variation in the male share across grades within the private school sector is, therefore, driven only by gender sorting across schools that offer certain grades.⁷ Our results suggest that private schools that offer lower grades (namely, K-3rd) have higher female enrollments than schools that offer higher grades (namely, 9th-12th). Between the two extremes of private and irregular public schools, Column (4) reveals a slight over-enrollment of males in regular public schools and an under-enrollment of males in charter schools, particularly at the high school level.

Columns (5), (6), (7), and (8) provide the analysis of gender sorting, with a comparison of observed sorting to sorting under random allocation. For each grade-level, the amount of residual sorting (shown in Columns (7) and (8)) is much higher in the private schools than in the public schools. For instance, among private high schools (9th and 12th grades), the observed standard deviation of male share is approximately 17 percentage-points higher (or double) what would be expected by chance. In contrast, gender sorting within the regular public school system is relatively low, especially in the lower grades, K through 6th.⁸ In secondary school,

⁷ If it is further true that *within* private schools there is gender sorting in the same direction (e.g., that kindergarten in school j has a disproportionate female enrollment than first grade in school j), then our method of random allocation would lead to an underestimate of the extent of gender sorting across schools serving a particular grade.

⁸ Though gender sorting is relatively low in the regular schools, the amount of gender sorting is still statistically different than what would be expected under a random allocation of students to schools. In fact, the standard deviation of male share in the randomly sorted data was less than

where students' choices likely play a larger role, the difference between the observed sorting and sorting under random assignment is larger, but nowhere near the residual sorting observed in the private schools. Among the remaining three types of schools (irregular public, magnet, and charter), there is some interesting variation by grade-level. In most grades, residual sorting is higher in the irregular public schools than in the other two types of schools. Sorting tends to be higher in charter schools than in magnet schools in the early grades, but lower in the high school grades.

Finally, Column (9) reveals that most of the single sex schools are in the private school sector, particularly in the high school grades where approximately 19% of all private schools serve only one gender. Single-sex schools are almost nonexistent in the regular public schools as well as charter and magnet schools. Given the modest enrollment in single sex schools among these school types, the levels of non-random gender sorting must be driven by sorting across coed schools.⁹

the standard deviation of male share in the actual distribution in all 100 iterations for each grade within each sector and school type.

⁹ In results not show, we split private schools into those that are religious and that that are nonsectarian. Most students who attend private schools are in religious private schools (74% to 85% across grades K-12), thus the “private school” results shown in Table 2 are dominated by religious schools. At all grade levels, we find significantly more gender sorting across religious private schools and across nonsectarian private schools than we would expect by chance. Single sex private nonsectarian high schools are less common (9% to 10% across grades 9-12) than single sex private religious high schools (21% to 22% across grades 9-12). In each of these high school grades, the standard deviation of male share across nonsectarian (religious) private

4c. Variation in Across-School Gender Sorting Across U.S. Counties

The results from Tables 1 and 2 indicate a substantial amount of gender sorting across and within school types that is beyond what would be expected if students were randomly assigned to their schools. In this section, we examine the variation in residual gender sorting across counties in the U.S. and focus in particular on the association between sorting and the local school choice options that are available to guardians and students.

Figure 1 provides a graphic portrait of the distribution in across-school residual gender sorting throughout the U.S; the gender sorting within schools in each county that is shown in Figure 1 is based on the average residual sorting across all grades and school types. The lighter shaded areas are those where the levels of across-school gender sorting are lower than or very close to the levels that would arise under random assignment. The lightest shade, for instance, represents communities where the difference in the actual standard deviation of males across schools and the random-allocated standard deviation is less than 0.3 percentage points.¹⁰ At the other extreme, the dark shaded areas represent communities with high levels of across-school gender sorting (where the darkest shade indicates a residual sorting of above 4.5 percentage-points).

schools is more than double (triple) what we would expect by chance. Full results are available on request.

¹⁰ Negative percentage-point differences indicate sorting that is below that which would be expected by chance. This result could occur by chance (i.e., accidental gender balance) or by deliberate decisions of administrators to achieve gender balance across schools within the county.

There are notably higher levels of across-school gender sorting in counties in urban areas along the Eastern Seaboard stretching from Washington, D.C. to Boston. We also see high levels of gender sorting around the Great Lakes, throughout much of Florida, Arizona, California, and in the more populated Western areas of Oregon and Washington. Finally, there are clusters of counties (e.g., southern Georgia and central West Virginia) with low amounts of gender sorting in schools. Not surprisingly, given the clear clustering of high and low gender sorting counties, we find that spatial autocorrelation is positive and significant.¹¹

[*INSERT Figure 1*]

A number of factors likely drive the across-school gender sorting that exists within each county. Our focus is on the local school choice options that are available to guardians and students. For all grades combined and for selected grades, Panel A of Table 3 provides the variation over U.S. counties in across-school residual sorting for all schools and for public schools by grade level while Panel B provides our measures of local choice options; the percent of students enrolled in each school type. The first two numbers in Panel A show that across all 13 grades, the mean residual sorting (actual sorting- random sorting) is 2.15 percentage-points with a standard deviation of approximately 2 percentage-points. Consistent with the findings in Table 1, the mean level of residual sorting across counties is highest in kindergarten and the high school grades. The means from Panel B are consistent with the national means, indicating that the overwhelming majority of students are enrolled in regular public schools. At the same time, the standard deviations in the percent of students enrolled in private schools, charter schools, irregular public, and magnet schools (particularly in the secondary school grades) indicate wide

¹¹ Moran's I value = 0.057 (Z-score=61.5, p-value=0.000).

variation across counties in the local school choice options that are available to guardians and their children.

[*INSERT Table 3*]

Table 4 provides the relationship between residual gender sorting across schools within counties and local school choice options in the county using ordinary least squares regression. Panels A evaluates gender sorting across all schools, while Panel B evaluates gender sorting across public schools. The bolded coefficients are statistically significant at the 5% level. The numbers in the first column of Panel A indicate, for instance, that a 10 percentage-point increase in the share of students enrolled in private schools associates with a 2.4 percentage-point increase in the across-school residual gender sorting when all grades are averaged together. The relationship between the presence of private schools and gender sorting is highest at the kindergarten and high school levels, which partially reflects the prevalence of single-sex private high schools. The second largest coefficients come from the share of students in irregular schools, which has the largest influence on sorting at the high school level. Local magnet schools appear to contribute very little to gender sorting, while local charter schools associate with higher levels of sorting in the secondary school grades. Panel B, which focuses on the relationship between local school choice and gender sorting within the public school system, shows very similar results to those from Panel A: counties with more local private schools, irregular public schools, and charter schools have higher levels of gender sorting within public schools.^{12,13}

¹² Figure 1 suggests that gender sorting is highest in urbanized areas. Our correlations suggest that these areas also have more school choice options than other areas. In analyses not shown but available upon request, we restrict the sample to the 100 largest counties (which represent

[INSERT Table 4]

4d. Guardian Preferences for School Attributes by Gender of Children

In this section, we search for explanations for non-random gender sorting in the stated school preferences of guardians and parents using the NHES (described above in Section 3a). Table 5 documents the means of the responses to all school choice questions based on the gender of the child and the gender composition of siblings in the household.

[INSERT Table 5]

The results indicate that girls are more likely to be home-schooled, particularly if they have a brother. Among all students, 2.5% of boys are home schooled compared to 3.5% of girls, a statistically significant difference. Among girls with brothers, the share who are home schooled increases to 4.1%. The remaining questions show the results for children who were not

42% of all U.S. counties) and find that the association between school choice and gender sorting is *strongest* in large urban areas. Urban areas offer more schools that are located nearby families, which may increase a family's ability to make gender-based enrollment decisions.

¹³ Since some states do not supply CCD with data on whether the school is a magnet (see footnote 2), we ran versions of the regressions shown in Table 4 which (A) excluded states that did not supply CCD data on the magnet status of their schools and have schools with "Magnet" in their name (i.e., excluded AZ, MA, NE, NJ, OR, TX); (B) excluded states that did not supply CCD data on the magnet status of their schools (i.e., excluded AZ, HI, IA, MA, MT, NE, NH, NJ, OH, OK, OR, RI, SD, TX, VT, WA, WV, WY); and (C) included all states but added state fixed effects to the specification. The results (available on request) are highly robust to these alternate samples/specifications, and reveal the same patterns shown in Table 4.

home-schooled. Before we get to the analysis of differences in preferences based on the gender of the child, note that parents report a high degree of consideration of their schooling options. Among the students who are not home schooled, nearly one-third of children have parents who considered having the child attend a different school and more than one-quarter of children have a parent who reported moving to their neighborhood to be eligible for the child to attend a particular school.

We find that parents are less likely to consider having their child attend another school if they have children of both sexes in the household.¹⁴ This result suggests that in households with single-gender children, there may be more willingness to consider schooling options and thus exercise gendered preferences. Among parents who considered having their child attend another school, parents were significantly more likely to gather information on school performance for daughters than for sons without sisters.

There appear to be no statistically significant differences in the prevalence of moving to a neighborhood to attend a particular school. Parents who have only girls report that are more likely to choose a school than parents who have only boys; however, this relationship is only marginally statistically significant. Finally we find no significant differences in the stated reasons why parents chose a particular school for their children, such as academic performance, location, etc.

Overall, these results do not present overwhelming evidence of gendered parental preferences. Of course, stated preferences of parents may not reflect their actual behavior as parents may be unaware of (or uncomfortable admitting to) differences in the factors they have considered for their sons and daughters education. The large share of parents reporting that they

¹⁴ The p-value for difference between girls with brothers and boys with no sisters is 0.116.

consider schooling options and move to particular neighborhoods for their child's school enrollment suggests that there is ample scope for parents to make gender-based choices (even if they do not state overwhelmingly different preferences).

5. Discussion and Conclusion

U.S. girls outperform boys in many aspects of educational attainment and there is some evidence of gendered peer effects in schools (Whitmore 2005). It is in this context that we seek to understand whether boys and girls are systematically attending different schools, as such differential enrollment decisions may exacerbate or narrow the achievement and attainment disparities between male and female students.

This paper is the first to document evidence of gender sorting across U.S. schools that substantially exceeds (and is statistically significantly different from) the gender sorting that would occur if students were randomly assigned to their schools. Across-school gender sorting occurs at all grade levels (but is highest in the high school grades) and is prevalent among coed schools (that is, when single-sex schools are removed from the analysis). Our results indicate some gender sorting *across* school sectors and types: for instance, males are slightly under-represented in private schools and charter schools, and substantially over-represented in irregular public schools, a large share of which educate students with special needs and juvenile justice involvement. Gender sorting *within* sectors and types is also quite prevalent and appears to be highest within the private schools (where single-sex schools are more common) and irregular public schools. Given these relationships, we find higher gender sorting across schools in counties with more extensive school choice options (particularly, in counties that have more private and irregular public schools).

These results provide an empirical baseline for tracking gender sorting in the nation's public schools. As mentioned in the introduction, recent amendments to Title IX provide public schools and school districts more options for forming single-sex classrooms and schools (Schemo 2006; USDOE 2008). Thus, continued monitoring of gender sorting (particularly given the possibility that the gender composition of students' classmates can influence their achievement) may be warranted.

In an attempt to understand why guardians might choose different schools for their sons and daughters (or why students choose differently based on their gender), we analyzed guardians' responses Parent and Family Involvement in Education portion of the 2007 National Household Education Survey. The national survey includes several questions about the information that guardian's collect and consider in choosing schools for their children. Prior studies that use this survey have detected large differences in the stated preferences of parents by their race/ethnicity (e.g., Grady and Bielick, 2010); in contrast, we do not find large differences in stated preferences by the gender of the children. That is, guardians of girls do not report large differences in their schooling decisions (and school characteristics preferences) than guardians of boys. There are several reasons for the similarities in the stated preferences. First, guardians may be unaware of (or unwilling to state) different preferences for their sons and daughters. Second, the survey questions may not accurately capture the true differences in the preferences (for instance, parents were not asked whether they evaluate schools differently for their sons and daughters). Third, the survey focuses on the opinions and attitudes of guardians, not children. For the older children (where the gender sorting is highest), the preferences of the children may be much more important and more gendered. Finally, it is possible that the preferences do not actually differ and that the sorting that we observe is primarily driven by school-level decisions (e.g.,

recommendations and assignments of youth into irregular schools). These results clearly call for more data collection and analysis of what motivates students, parents, and schools to make enrollment choices and evaluation of how these choices vary by students' gender.

References

- Abdulkadiroglu, Atila, Joshua Angrist, Sarah R. Cohodes, Susan Dynarski, Jon Fullerton, Thomas Kane, and Parag Pathak. (2009). "Informing the Debate: Comparing Boston's Charter, Pilot, and Traditional Schools." Boston: The Boston Foundation.
- Authors. (2012).
- Booker, Kevin, Brian Gill, Ron Zimmer, and Tim R. Sass. (2009). "Achievement and Attainment in Chicgo Charter Schools." Santa Monica: RAND Education.
- Broughman, S., Tourkin, S., Swaim, N., Hryczaniuk, C., Guan, X., Peterson, J., Parmer, R., Abramson, R., Zhang, B., Andriani, S., & Walter, E. (2009). *2007–08 Private School Universe Survey (PSS) Data File User's Manual and Survey Documentation* (NCES 2009-319). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Chen, C. (2011). *Documentation to the NCES Common Core of Data Public Elementary/Secondary School Universe Survey Preliminary File: School Year 2010–11* (NCES 2011-361). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved December 7, 2011 from <http://nces.ed.gov/ccd/pdf/psu10pgen.pdf>.
- Conger, Dylan. (2005). "Within-School Segregation in an Urban School District." *Educational Evaluation and Policy Analysis*, 27(3), pp. 225-244.
- Conger, D., and Long, M.C. (2010). "Why are men falling behind? Explanations for the gender gap in college outcomes." *The ANNALS of the American Academy of Political and Social Science* Vol. 627 (1): 184-214.

- Corcoran, Sean P., and Jennifer L. Jennings. (2011). "The Gender Gap in Charter School Attendance." Working Paper.
- David, Miriam. (1997). "Diversity, Choice and Gender." *Oxford Review of Education* 23(1):77-87.
- Dynarski, S. (2007). "The puzzle of gender differences in educational outcomes." Unpublished working paper.
- Fryer, R.G., and Levitt, S.D. (2010). "An empirical analysis of the gender gap in mathematics." *American Economic Journal: Applied Economics* 2: 210-240.
- Grady, S. and Bielick, S. (2010). *Trends in the Use of School Choice: 1993 to 2007* (NCES 2010-004). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Hastings, Justine, Thomas J. Kane, and Douglas O. Staiger. (2006). "Gender and Performance: Evidence from School Assignment by Randomized Lottery." *American Economic Association Papers and Proceedings* 96(2): 231-236.
- Heckman, James J., and Paul A. LaFontaine. (2010). "The American High School Graduation Rate: Trends and Levels," *The Review of Economics and Statistics*, 92(2), pp. 244-262.
- Henig, Jeffrey. (1994). *Rethinking School Choice: Limits of the Market Metaphor*. Princeton, NJ: Princeton University Press.
- Heubert, Jay P. and Robert M. Hauser, eds. (1999). *High Stakes: Testing for Tracking, Promotion, and Graduation*. Washington D.C.: National Academy Press.
- Heckman, James J., and Paul A. LaFontaine. (2010). "The American High School Graduation Rate: Trends and Levels," *The Review of Economics and Statistics*, 92(2), pp. 244-262.

- Hibel, Jacob, George Farkas and Paul L. Morgan. (2010). "Who Is Placed into Special Education?" *Sociology of Education*, 83(4), pp. 312-322.
- Hoxby, Caroline M. (2000). "Peer Effects in the Classroom: Learning from Gender and Race Variation." *National Bureau of Economic Research*, Working Paper 7867.
- Hoxby, Caroline M., and Sonali Murarka. (2009). "Charter Schools in New York City: Who Enrolls and How They Affect their Students Achievement." *National Bureau of Economic Research*, Working Paper Series.
- Hussar, William J., and Tabitha M. Bailey. (2011). *Projections of Education Statistics to 2019* (NCES 2011-017). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Jackson, Carolyn, and Moray Bisset. (2005). "Gender and School Choice: Factors Influencing Parents When Choosing Single-Sex or Co-Educational Independent Schools for their Children." *Cambridge Journal of Education* 35(2):195-211.
- Jacob, Brian A. (2002). "Where the Boys Aren't: Non-cognitive Skills, Returns to School and the Gender Gap in Higher Education." *Economics of Education Review* 21(6):589-598.
- Lavy, Victor, and Analía Schlosser. (2011). "Mechanisms and Impacts of Gender Peer Effects at School." *American Economic Journal: Applied Economics* 3: 1-33.
- National Association for Single Sex Public Education, 2012. www.singlesexschools.org.
- Peter, Katharin, and Laura Horn. (2005). *Gender differences in participation and completion of undergraduate education and how they have changed over time*. Washington, DC: National Center for Education Statistics, U.S. Department of Education. (NCES 2005-169).
- Petroni, Maureen A. (1996). "The Choices Parents Make." *Educational Leadership* 54: 33-36.

- Piché, D. and Taylor, William L. (Eds). (2004). *Choosing Better Schools: A Report on Student Transfers Under No Child Left Behind*. Washington DC: Citizens' Commission on Civil Rights.
- Reynolds, John R., and Stephanie W. Burge. (2008). "Educational Expectations and the Rise in Women's Educational Attainments." *Social Science Research* 37(2): 485-499.
- Riegle-Crumb, Catherine. (2010). "More Girls Go to College: Exploring the Social and Academic Factors Behind the Female Postsecondary Advantage among Hispanic and White Students." *Research in Higher Education* 51(6).
- Robenstine, C. (2001). "Public Schooling, the Market Metaphor, and Parental Choice." *The Educational Forum* 65(3), 234-243.
- Robinson, Joseph P. and Sarah T. Lubienski. (2011). "The Development of Gender Achievement Gaps in Mathematics and Reading During Elementary and Middle School: Examining Direct Cognitive Assessments and Teacher Ratings." *American Educational Research Journal* 48(2): 268-302.
- Rose, L. (2001). "The 33rd Annual Phi Delta Kappa/Gallup Poll of the Public's Attitudes toward Public Schools." *Phi Delta Kappan*.
- Schemo, Diana Jean. (2006). "Federal Rules Back Single-Sex Public Education." *New York Times*, October 25. Accessed on June 3, 2011 from <http://www.nytimes.com/2006/10/25/education/25gender.html>.
- Schneider, Mark, Teske, Paul, and Marschall, Melissa. (2000). *Choosing Schools: Parents, School Choice, and the Quality of American Schools*. Princeton, NJ: Princeton University Press.

Tracy, Paul, Kimberly Kempf-Leonard, and Stephanie Abramoske-James. (2009). "Gender Differences in Delinquency and Juvenile Justice Processing," *Crime & Delinquency*, 55(2), pp. 171-215.

(USDOE) United States Department of Education, Office of Planning Evaluation and Policy Development, Policy and Program Studies Service. (2008). *Early Implementation of Public Single-Sex Schools: Perceptions and Characteristics*. Washington, DC.

Whitmore, Diane. (2005). "Resource and Peer Impacts on Girls' Academic Achievement: Evidence from a Randomized Experiment." *The American Economic Review* 95(2): 199-203.

Table 1: Gender Sorting of Youth Across U.S. Schools: 2007-08 CCD and PSS Data

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Grade	Number of Youth	Number of Schools	Enrollment Per School	Male Share	Actual Distribution: Standard Deviation of Male Share	Random Distribution: Standard Deviation of Male Share*	Percentage-point Difference: (5)-(6)	Percent difference: [(5)-(6)/(6)]*100	Share of Enrollment in Single Sex Schools
Across	K	4,034,439	76,027	53	50.1%	10.0%	6.9%	3%	46%	0.9%
135,427	1	4,085,179	73,521	56	50.8%	8.1%	6.7%	1%	21%	0.5%
Schools	2	4,027,153	73,376	55	50.7%	7.9%	6.7%	1%	18%	0.5%
	3	3,977,762	73,141	54	50.7%	8.0%	6.8%	1%	18%	0.5%
	4	3,943,310	72,537	54	50.7%	8.0%	6.8%	1%	18%	0.5%
	5	3,919,630	70,862	55	50.7%	8.0%	6.7%	1%	19%	0.5%
	6	3,961,163	55,167	72	50.8%	7.5%	5.9%	2%	28%	0.6%
	7	4,031,533	47,316	85	50.9%	7.2%	5.4%	2%	34%	0.7%
	8	4,040,573	47,386	85	51.0%	7.4%	5.4%	2%	37%	0.8%
	9	4,502,991	33,714	134	51.9%	9.1%	4.3%	5%	112%	1.9%
	10	4,161,768	33,051	126	51.0%	9.2%	4.4%	5%	107%	1.9%
	11	3,849,194	32,391	119	50.4%	9.3%	4.6%	5%	103%	1.9%
	12	3,659,071	31,616	116	50.0%	9.6%	4.6%	5%	106%	2.0%

Note: Means and standard deviations are weighted by the population of the grade level in the school. "Single sex school" is defined by whether there are no males or no females enrolled in that grade-level.

* Mean of the standard deviation of male share across 100 randomly sorted distributions.

Table 2: Gender Sorting of Youth Across Sector Types of Schools

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Number of Youth	Number of Schools	Enrollment Per School	Male Share	Actual Distribution: Standard Deviation of Male Share	Random Distribution: Standard Deviation of Male Share*	Percentage-point Difference: (5)-(6)	Percent difference: [(5)-(6)]/(6)*100	Share of Enrollment in Single Sex Schools
Grade	Sector and Type									
K	Private	508,763	25,250	20	38.8%	19.2%	10.8%	8.4%	78%	6.8%
	Regular Public	3,301,696	46,187	71	51.8%	6.2%	5.9%	0.2%	4%	0.0%
	Irregular Public	14,984	920	16	55.3%	14.2%	12.3%	1.8%	15%	3.6%
	Magnet	112,103	1,592	70	51.1%	6.4%	6.0%	0.5%	8%	0.0%
	Charter	103,910	2,266	46	50.4%	8.4%	7.4%	1.1%	14%	0.4%
3	Private	387,637	21,554	18	45.3%	16.0%	11.7%	4.3%	37%	4.3%
	Regular Public	3,368,414	46,675	72	51.4%	6.1%	5.9%	0.2%	3%	0.0%
	Irregular Public	15,448	1,213	13	57.5%	17.3%	13.8%	3.4%	25%	6.9%
	Magnet	119,338	1,626	73	50.5%	6.4%	5.8%	0.6%	10%	0.0%
	Charter	93,724	2,276	41	50.2%	8.6%	7.8%	0.8%	10%	0.3%
6	Private	387,861	20,425	19	46.4%	16.4%	11.4%	5.0%	44%	5.1%
	Regular Public	3,298,096	29,315	113	51.4%	5.1%	4.7%	0.4%	8%	0.1%
	Irregular Public	22,391	2,115	11	61.0%	20.4%	15.0%	5.4%	36%	11.1%
	Magnet	157,375	1,220	129	50.1%	6.0%	4.4%	1.6%	37%	0.0%
	Charter	103,356	2,343	44	49.8%	9.0%	7.5%	1.5%	20%	0.4%
9	Private	356,744	10,437	34	50.5%	25.0%	8.5%	16.5%	194%	19.1%
	Regular Public	3,656,570	16,449	222	51.9%	4.5%	3.4%	1.2%	35%	0.1%
	Irregular Public	140,546	4,737	30	59.8%	19.0%	9.0%	10.0%	112%	7.7%
	Magnet	263,398	691	381	51.1%	5.3%	2.6%	2.8%	109%	0.1%
	Charter	106,365	1,773	60	49.9%	10.9%	6.5%	4.4%	69%	1.0%
12	Private	323,445	9,095	36	50.2%	25.0%	8.3%	16.6%	200%	19.1%
	Regular Public	2,891,803	15,685	184	49.8%	4.7%	3.7%	1.0%	27%	0.1%
	Irregular Public	194,163	5,000	39	55.8%	15.7%	8.0%	7.8%	97%	3.8%
	Magnet	184,602	660	280	47.4%	5.8%	3.0%	2.8%	94%	0.1%
	Charter	83,031	1,543	54	48.0%	10.9%	6.8%	4.1%	61%	0.4%

Note: Means and standard deviations are weighted by the population of the grade level in the school. "Single sex school" is defined by whether there are no males or no females enrolled in that grade-level. Full results by grade are available from the authors.

* Mean of the standard deviation of male share across 100 randomly sorted distributions.

Figure 1: Residual Gender Sorting Across Schools Within U.S. Counties

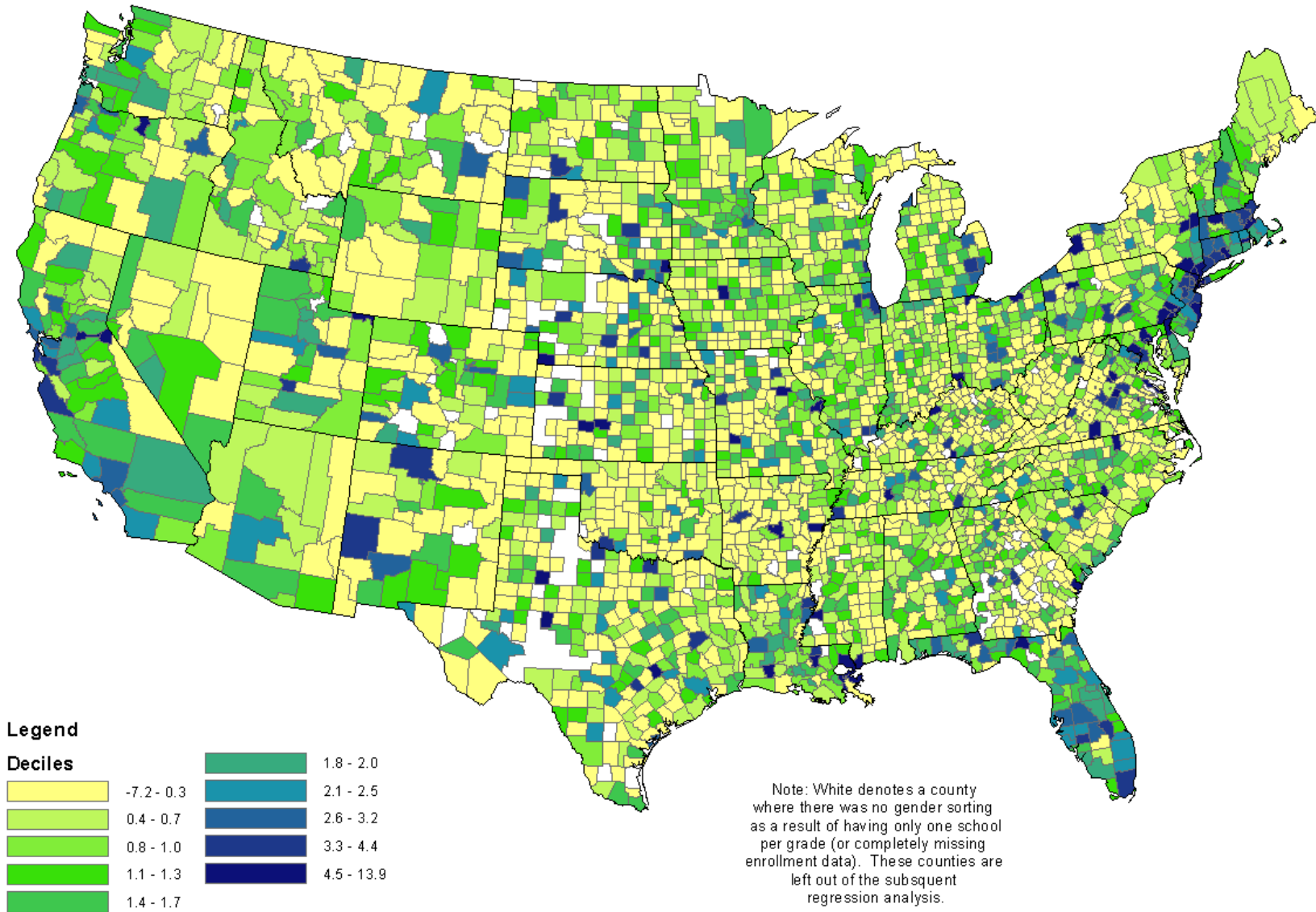


Table 3: Distribution in Across-School Gender Sorting and Local School Options Across U.S. Counties

	Average	Grade Level				
	Across 13 Grades	K	3	6	9	12
Panel A: Sorting						
Residual Gender Sorting Across All Schools	2.15 (2.08)	2.63 (2.30)	0.99 (1.72)	1.41 (1.92)	3.87 (4.11)	3.97 (4.42)
Residual Gender Sorting Across Public Schools	0.87 (0.82)	0.29 (1.10)	0.23 (1.07)	0.67 (1.28)	2.00 (2.35)	1.93 (2.13)
Panel B: School Choice						
Percent of Students in Private Schools	8.7 (5.6)	11.4 (6.9)	9.0 (5.7)	9.0 (6.1)	7.1 (5.6)	8.2 (6.9)
Percent of Students in Regular Public Schools	89.7 (6.3)	88.2 (7.3)	90.6 (6.2)	90.4 (6.6)	89.8 (7.5)	86.7 (9.1)
Percent of Students in Irregular Public Schools	1.6 (2.0)	0.4 (2.0)	0.4 (1.8)	0.6 (2.0)	3.1 (3.9)	5.1 (5.4)
Percent of Students in Magnet Public Schools	4.0 (7.6)	2.8 (6.0)	3.0 (6.3)	4.0 (8.0)	5.8 (12.8)	5.4 (12.1)
Percent of Students in Charter Public Schools	2.4 (3.5)	2.6 (3.9)	2.4 (3.7)	2.7 (4.1)	2.3 (3.7)	2.3 (4.2)

Note: Data from 2007-08 CCD and 2007-08 PSS. Means are weighted by the 2010 Census population of the county. Full results by grade are available from the authors.

Table 4: Association between Local Schooling Options and Gender Sorting Across Schools Within a County

Variables (County-Level):		Average	Grade Level				
		Across 13 Grades	K	3	6	9	12
Panel A:	Percent of Students in Private Schools	0.24	0.23	0.13	0.16	0.39	0.41
Regression	Percent of Students in Irregular Public Schools	0.24	0.03	0.04	0.07	0.32	0.22
Coefficients for All	Percent of Students in Magnet Public Schools	0.00	-0.01	-0.01	0.00	0.02	0.00
Schools	Percent of Students in Charter Public Schools	0.03	0.00	0.00	0.03	0.14	0.10
	Constant	0.00	0.00	0.00	0.00	0.00	-0.01
	Number of Observations	2963	2905	2913	2848	2738	2718
	Adjusted R ²	0.56	0.45	0.19	0.29	0.51	0.53
Panel B:	Percent of Students in Private Schools	0.04	0.01	0.01	0.05	0.07	0.09
Regression	Percent of Students in Irregular Public Schools	0.11	-0.02	-0.02	0.00	0.27	0.19
Coefficients for	Percent of Students in Magnet Public Schools	0.01	0.00	0.00	0.01	0.02	0.01
Public Schools	Percent of Students in Charter Public Schools	0.04	0.02	0.02	0.03	0.08	0.07
	Constant	0.00	0.00	0.00	0.00	0.00	0.00
	Number of Observations	2905	2844	2852	2706	2570	2558
	Adjusted R ²	0.32	0.01	0.01	0.08	0.33	0.38

Note: Dependent variable = residual sorting (standard deviation in male share across schools - mean standard deviation in male share derived from 100 random simulations). Panel B computes this dependent variable using sorting across public schools. Regressions are weighted by the 2010 U.S. Census population of the county. Bold coefficients are significant at the two-tailed 5% level. Standard errors are available from the authors. Data from 2007-08 CCD and 2007-08 PSS. Full results by grade are available from the authors.

Table 5: Average Parental Preferences for School Attributes by Child's Gender

	(1)	(2)	(3)	(4)	(5)	(6)
	Children Aged 5-18 (N = 10,602)					
	Child is a Boy	Child is a Girl	Boy: No Sisters	Boy: Sisters	Girl: Brothers	Girl: No Brothers
Home schooled	0.025	0.035 **	0.023	0.026	0.041 **	0.028
Considered attending other schools. (Public and private school students only.)	0.32	0.32	0.34	0.31 **	0.31	0.32
Gathered info on performance. (Among those who considered attending other schools).	0.72	0.75	0.70	0.74	0.76 **	0.75 *
Moved to neighborhood to be eligible to attend this school. (Public school students only).	0.27	0.26	0.27	0.26	0.27	0.25
Chose school.† (Public school students only).	0.18	0.17	0.17	0.19	0.16	0.20 *
Main reason chose this school.‡						
Academic Performance / Test Scores	0.29	0.27	0.30	0.29	0.27	0.28
Location	0.23	0.22	0.23	0.23	0.21	0.22
Academic Programs, Educ. Philosophy, Teaching Methods	0.10	0.10	0.10	0.10	0.09	0.11
Religious / Spiritual	0.09	0.08	0.08	0.09	0.09	0.07

† Includes those who state that their assigned school was also their chosen school. ‡Excludes those who attended their assigned school and did not consider other schools. We have presented the top four most cited main reasons for choosing this school among 23 listed options (including "other").

Note: Data from 2007 NHES. Means are weighted using replicate weights "FPWT1"- "FPWT80" to account for the probabilities of selection, nonresponse, and undercoverage. "****", "***", and "**" entries in columns 2 and 4-6 denote means that are significantly different than means in columns 1 and 3, respectively, at the two-tailed 1%, 5%, and 10% levels, respectively. Standard errors are available from the authors.