



The Impact of Targeted School Vouchers on Racial Stratification in Louisiana Schools

Education and Urban Society

2017, Vol. 49(3) 271–296

© The Author(s) 2016

Reprints and permissions:

sagepub.com/journalsPermissions.nav

DOI: 10.1177/0013124516643760

journals.sagepub.com/home/eus



**Anna J. Egalite¹, Jonathan N. Mills²,
and Patrick J. Wolf³**

Abstract

The question of how school choice programs affect the racial stratification of schools is highly salient in the field of education policy. We use a student-level panel data set to analyze the impacts of the Louisiana Scholarship Program (LSP) on racial stratification in public and private schools. This targeted school voucher program provides funding for low-income, mostly minority students in the lowest-graded public schools to enroll in participating private schools. Our analysis indicates that the vast majority (82%) of LSP transfers have reduced racial stratification in the voucher students' former public schools. LSP transfers have marginally increased stratification in the participating private schools, however, where just 45% of transfers reduce racial stratification. In those school districts under federal desegregation orders, voucher transfers result in a large reduction in traditional public schools' racial stratification levels and have no discernible impact on private schools. The results of this analysis provide reliable empirical evidence on whether or not parental choice harms desegregation efforts in Louisiana.

¹North Carolina State University, Raleigh, NC, USA

²Tulane University, Education Research Alliance for New Orleans, LA, USA

³University of Arkansas, Fayetteville, AR, USA

Corresponding Author:

Anna J. Egalite, Department of Educational Leadership, Policy, and Human Development,
North Carolina State University, Raleigh, NC 27695, USA.

Email: Anna_Egalite@ncsu.edu

Keywords

racial stratification, vouchers, school choice, systemic effects, segregation

Introduction

Many contemporary education reform policies attempt to apply market principles to K-12 education, under the assumption that choice and competition will spur improvements across the entire education system. One of the most important considerations with this approach is the systemic effect of market-based school reforms on racial stratification in schools. As private school voucher and tuition tax credit scholarship programs continue to expand across the United States, will their proliferation undermine an important civic goal, namely improved racial/ethnic integration?

The Louisiana Scholarship Program (LSP) is a statewide school choice program that enables low-income students in under-performing public schools to enroll in participating private schools at the state's expense. Although a pilot version of the program was in operation in the city of New Orleans since 2008, Act 2 of the 2012 Regular Session expanded the program statewide. As a result, almost 10,000 eligible Louisiana students applied for LSP vouchers in school year 2012-2013, which were allocated by lottery by the state department of education. Approximately 5,000 public school students ultimately used a voucher to enroll in one of 117 private schools across the state, the majority of which were Catholic schools. By program design, all of these students were low-income and had previously attended a low-performing public school. Four fifths of program participants were African American.

This article examines how voluntary school transfers made possible by LSP vouchers impacted racial stratification in public and private schools in Louisiana in the first year of the program's statewide operation. It is a common criticism of school choice programs generally that such programs have the power to worsen racial/ethnic stratification by giving students the resources to exit a residentially assigned public school in favor of a private school of choice (Berliner, Farrell, Huerta, & Mickelson, 2000; Cobb & Glass, 1999; Frankenberg, Siegel-Hawley, & Wang, 2010). Such concerns are particularly relevant in Louisiana, where racial segregation was once state-sponsored.

The landmark *Brown v. Board of Education of Topeka, Kansas* (1954) decision marked the beginning of court supervision of school desegregation efforts. Today, the federal government continues to oversee public schools in 34 Louisiana school districts to ensure they are observing active desegregation plans. In addition, Louisiana has relevant state-level court decisions on

this topic. *Brumfield v. Dodd* (1975) marked the end of state financial assistance of any kind for private schools with admissions policies that segregate or discriminate. This includes funding for textbooks, school supplies, student transportation, or classroom materials. In August 2013, the U.S. Justice Department filed a motion in the *Brumfield v. Dodd* lawsuit, seeking an injunction against the LSP, alleging that the program increases racial segregation. After several months of negotiations between the State of Louisiana and the Justice Department, the U.S. District Court issued a decree that the state must provide the federal government with information on LSP applicants, including student race, at least 10 days before scholarships are awarded. In November 2015, however, the Fifth Circuit Court of Appeals overturned the District Court's decree in a 2-1 decision, noting the reporting requirement was "beyond the scope of the district court's continuing jurisdiction in this case" (*Brumfield v. Louisiana State Board of Education*, 2015).

Given the ongoing efforts to reduce stratification in Louisiana's public schools as well as the legal attention surrounding this issue, it is important to thoroughly document how the LSP affects racial stratification. In this study, we empirically examine the issue using data on LSP voucher users. By tracking individual students across time as they move from the public to private sector, we can quantitatively determine if these transfers increased or reduced racial stratification at students' former public schools (*sending schools*) and current private schools (*receiving schools*) by nudging the school's racial composition nearer to or further from the racial composition of the surrounding community.

In general, our analysis indicates that access to additional educational choices for low-income students has not increased racial stratification in public schools in Louisiana, a welcome outcome for a state with a history of state-sponsored segregation. Specifically, we find that LSP voucher users have significantly reduced racial stratification in traditional public schools, what we will call "sending" schools. Findings for private schools, however, suggest that just 45% of transfers reduce racial stratification in those "receiving" schools. The results of this analysis provide empirical evidence that can be used to inform ongoing debates both inside and outside of the courtroom over whether or not parental choice is harming current desegregation efforts in Louisiana's schools. It also provides an example of how the effects of school choice interventions on stratification should be evaluated based on careful consideration of the counterfactual—the stratification level that exists under the status quo.

The remainder of this article proceeds as follows. First, we provide a summary of the literature examining the impacts of school choice programs on racial stratification. In the next section, we describe the data used in our

analysis and describe our empirical methodology. The following section presents the results. Finally, we conclude with a summary of the findings and a discussion of the implications for public policy.

Previous Literature

School Choice and the Achievement Gap

The merits of a particular school choice proposal must be considered first from a philosophical perspective. Most scholars agree that the state is obligated to find a balance between the private needs of parents, children, and educators and the public good (Glenn, 2011; Macedo & Wolf, 2004), particularly as it relates to closing racial achievement gaps (Jeynes, 2014a). What constitutes an acceptable tipping point varies by society, however. Taking an international perspective, Glenn (2011) observes that countries such as Germany and Austria view the provision of education as a responsibility of the state, whereas others such as the Netherlands and Belgium entrust education to institutions of civil society. In the United States, there is no consensus on which conception of the provision of education is most appropriate (Galston, 2004).

The theoretical arguments for and against choice take into consideration both the participant and systemic effects of such proposals. On the one hand, proponents of school choice argue that private institutions are best situated to offer diverse, high-quality educational experiences (Friedman, 1955). Many argue that the competition resulting from a market approach to education will spur overall improvements (Greene, 2011) and will particularly benefit student subgroups that are currently underserved, such as low-income and minority students in urban areas (Peterson, 2006). Because the achievement gap between majority and minority students is much smaller in private schools than in public schools, some scholars have posited that an expanded system of school choice would result in a narrowing of the national achievement gap (Jeynes, 2014b). On the other hand, opponents of school choice argue that the siphoning of state funds to private, often religious, institutions represents an abdication of the state's responsibility to provide a stable, equitable, and communal system of public education (Henig, 1994) and that it undermines the integrationist goal of preparation for democratic citizenship (Gutmann, 2002). Opponents have also raised concerns that selective private schools will refuse admission to the hardest-to-educate students, resulting in inequitable educational opportunities (Altonji, Huang, & Taber, 2015) particularly for subgroups of high-needs students such as those with English language deficiencies or special educational needs (Lacireno-Paquet, Holyoke, Moser, & Henig, 2002).

As school choice options proliferate across the states (Frendeway et al., 2015), much remains unknown about the impacts associated with transitioning from a system of residentially assigned traditional public schools to state-sponsorship of privately run and largely autonomous schools (Jeynes, 2000). This study's contribution to that literature is an examination of the localized impacts of school choice programs on racial stratification.

The Effect of School Choice on Racial Stratification

Previous studies on this topic can be broadly divided into two types: those using cross-sectional data and those using panel data examining actual student transfers. These two types can be further subdivided by method of analysis, resulting in a set of four general methods used to understand the impact of school choice programs on racial stratification. To assist the reader, Figure 1 presents a typology of all the racial stratification measures identified in our literature review.

Studies in the top left quadrant of Figure 1 rely on descriptive comparisons of users and eligible non-users. Henig (1996) notes that minorities were less likely to participate in a magnet school program in Maryland and that White transfer requests were for schools with high proportions of other White students in the student body. Willms and Echols (1993) use a similar approach to study a school choice program in Scotland, finding that parents whose children had exercised the school choice option were more likely to have a prestigious occupation and to have attained a higher level of education. Nevertheless, while this approach helps describe the types of students who actually access a given program, it does not capture impacts on racial stratification because it fails to examine school-level stratification before and after the program takes effect.

Studies in the top right quadrant of Figure 1 also take a cross-sectional approach. These studies use a racial composition benchmark such as the district or core-based statistical area (CBSA) to judge the relative level of racial stratification for schools in each sector and then compare the snapshots across the public and private sectors. Measures like the dissimilarity index (Burgess, Wilson, & Lupton, 2005; Clotfelter, 1999) and exposure index (Frankenberg & Lee, 2002; Garcia, 2008) take this approach, using the district as the benchmark. The primary weakness of these measures, however, is that their focus on strictly within-district comparisons fails to account for existing segregation across school districts (Greene, 2005), which often is high (Clotfelter, 1999). For example, a within-district measure like these would classify a public school that is 100% White in a school district that is 100% White as being perfectly integrated, even if it is adjacent to a district that is 100%

Typology of Racial Stratification Measures		Uses a Racial Composition Benchmark	
		NO	YES
Data Structure	Cross-Sectional	Descriptive Comparisons of Users v. Eligible Non-Users (Henig, 1996; Willms & Echols, 1993)	Within-District Sector Comparisons of School Racial Composition (Burgess, Wilson, & Lupton, 2005; Clotfelter, 1999; Frankenberg & Lee, 2002; Frankenberg, Siegel-Hawley, & Wang, 2010; Fuller & Greiveldinger, 2002; Fuller & Mitchell, 1999, 2000; Garcia, 2008) Within-CBSA Sector Comparisons of School Racial Composition (Bifulco & Ladd, 2006; Forster, 2006a, 2006b; Greene, Mills, & Buck, 2010; Greene & Winters, 2007; Ritter, Rush & Rush, 2002)
	Panel	Transfer Measures with No Benchmark (Zimmer et al., 2009)	Transfer Measures with a District Benchmark (Bifulco & Ladd, 2006) Transfer Measures with a CBSA Benchmark (Greene, Mills, & Buck, 2010; Ritter, Jensen, Kisida, & Bowen, 2016)

Figure 1. Typology of racial stratification measures.

African American. Moreover, a within-district measure would be particularly inappropriate to use in Louisiana, where the LSP actively allows students to transcend district boundaries.¹

Within-CBSA studies, on the other hand, use the demographic characteristics of the surrounding metropolitan or micropolitan area instead of the district as a benchmark of the desired racial composition for a school. Forster (2006a, 2006b) uses this approach to compare public and private schools in Cleveland and Milwaukee, finding that private schools participating in the Cleveland and Milwaukee voucher programs were less segregated, on average, than neighboring public schools. Greene, Mills, and Buck (2010) also use this approach in their study of segregation in Milwaukee, WI. They find

that, in some years, the voucher program schools better approximate the metro area in racial demographics and in other years the public schools better approximate this value but, over a 3-year period from 2006-2007 through 2008-2009, neither sector comes close to approximating the percentage of White students in the metro area. Greene and Winters (2007) also employ this approach in their analysis of the effects of the Washington, D.C., voucher program, finding that neither the public nor private education sector is particularly well integrated in the nation's capital.

Studies in the bottom row of Figure 1 take advantage of panel data sets to capture dynamic information on individual student transfers to estimate the overall impact of school choice programs on racial stratification, a major methodological advantage over the static cross-sectional studies in row 1 of Figure 1.

The bottom left quadrant consists of transfer measures with no benchmark; only one study has taken this approach. Zimmer et al. (2009) measure charter school segregation across seven locations. They calculate the difference in the proportion of students of each race in the charter school a student switches into and the prior traditional public school the student attended. In the majority of cases, they show that students tend to transfer into schools that do not differ significantly in terms of racial makeup from the schools they left.

Studies in the bottom right quadrant feature transfer measures that use a racial composition benchmark. These studies take advantage of panel data to track individual students' migration patterns as they transfer between schools, judging whether these transfers help or hinder integration by whether they move a school toward or away from the racial diversity of the chosen benchmark. These studies typically use either the school district or CBSA as benchmarks; and have generally found encouraging results for school choice. Our study of the impact of the LSP on racial stratification in Louisiana's public and private schools belongs in this category.

Bifulco and Ladd (2006) use this approach to analyze changes in the racial isolation experienced by third- through eighth-grade students who transfer to charter schools in North Carolina between 1996-1997 and 2001-2002. Schools in which the proportion of Black students is greater than 20 percentage points away from the district average are classified as "racially unbalanced." The authors then compare the proportion of students in each sector who attend a racially unbalanced school, finding that charter school students are approximately two and a half times more likely to attend one of these schools.

A small number of panel studies use the surrounding metropolitan or micro-politan area as the benchmark for the broader community (Greene et al., 2010;

Ritter, Jensen, Kisida, & Bowen, 2016). These CBSAs are characterized by high degrees of social and economic interdependence and therefore represent a more appropriate benchmark of racial composition against which to judge progress than the district because they proxy for the geographical area from which a school could reasonably be expected to draw students in the absence of legal or political boundaries. Greene et al. (2010) track student transfer effects on both sending and receiving schools in Milwaukee, WI. They show that in 2007-2008, 92% of departing students tended to be a member of a racial/ethnic group that was over-represented at their sending school, relative to the metro area. The departure of these students positively impacted racial integration efforts. The comparable statistic for 2008-2009 is 95%. On the other hand, when they analyze the impact of student transfers on receiving schools, the reverse is true. In 2007-2008, 91% of student transfers reduced integration in the receiving schools. The comparable statistic for 2008-2009 is 94%.

Finally, Ritter et al. (2016) use this approach to analyze the effects of charter school transfers in Little Rock, AR, between 2004-2005 and 2009-2010. They show that White student transfers in this time period improved racial integration in the sending schools twice as often as they reduced it (25% compared with 12%). For minority students, student transfers improved racial integration in the schools they left more than three times as often as reducing it (48% compared to 15%). Impacts on receiving schools are not computed.

As this review of the literature reveals, a panel study of student migratory patterns brought about by the introduction of a school voucher program has never been conducted across an entire state. Given the increasing prevalence of large-scale school voucher programs like the LSP, this article provides a timely analysis of a potentially serious unintended consequence of more expansive school choice programs. Moreover, the data and methods that we use in the analysis have the important advantages of permitting us to examine the impact of the movement of actual students in a school choice program, over time, compared with an appropriate racial integration benchmark.

Data

This study relies upon data from five total sources. First, student-level data provided by the Louisiana Department of Education on LSP voucher users allow us to identify individual-level school transfers. Second, school-level data on the racial composition of Louisiana's private schools come from the Private School Universe Survey (PSS), a national survey of private elementary and secondary schools conducted by the National Center for Education

Statistics (NCES) every 2 years since 1989-1990. In particular, our analysis relies on school-level data collected in the 2011-2012 school year, the year before the voucher program expanded statewide. Third, we collect corresponding data on the racial compositions of Louisiana's public schools in the 2011-2012 school year from the NCES's Public Elementary/Secondary School Universe Survey. In the case of any missing data in either of these sources, we supplement with data from earlier versions of these same surveys. Fourth, we use 5-year population estimates from the American Community Survey, administered by the U.S. Census Bureau, to generate community-wide benchmarks of the school-age racial composition of Louisiana's CBSAs in 2011-2012. The final data source is the lawsuit filed by the U.S. Justice Department in August 2013, which identifies those Louisiana public school districts that are under federal desegregation orders.

Sample Selection

Figure 2 describes how we generate the sample for our primary analysis. Starting with a student-level data set that includes all 9,831 eligible applicants for the LSP in its first year of statewide operation, we first narrow the sample to include only the 5,777 voucher winners identified in our data. Because all voucher winners did not necessarily use their voucher, the next screen reduces the sample to 4,941 students who were voucher users. The third screen only keeps those voucher users who were not participants in the New Orleans pilot program because those students often enroll in the same school as the previous year, and therefore they are not relevant for this analysis of actual school switchers. This screen reduces the sample to 3,338 students. The fourth screen excludes those students who were missing a prior school identification code. This includes students entering Kindergarten, for instance, or students moving to Louisiana from out of state. This brings the sample to 2,179 students. Fifth, those students who reside in rural areas that do not fall in a metropolitan or micropolitan area have to be excluded from our sample because we are unable to calculate the racial composition of the surrounding CBSA to use as the integration benchmark for them. This brings the sample to 2,117. Finally, because our analysis, and the legal and policy debate surrounding the issue, is focused on the integration impacts on traditional public schools, we exclude those students who previously attended a public charter school. Once this set of screening rules is employed, our final analysis sample consists of 1,741 students.

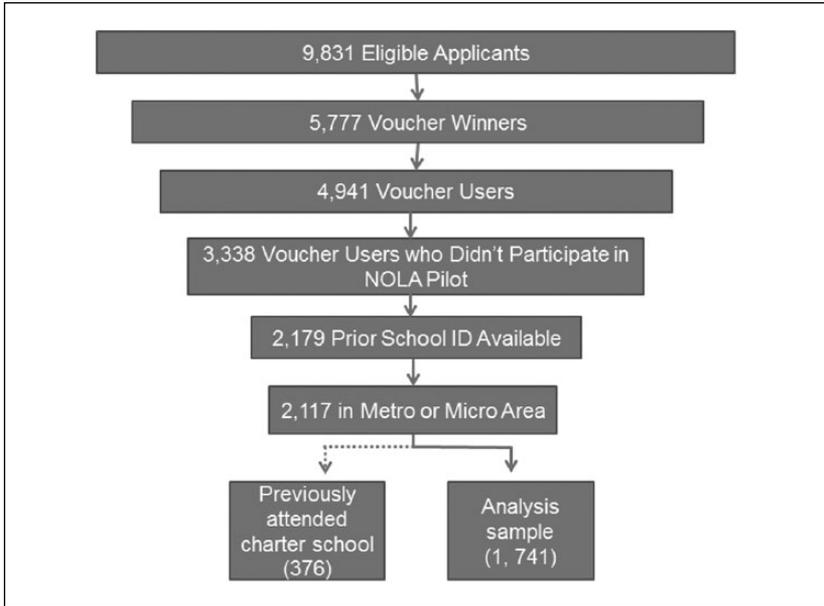


Figure 2. Creation of student sample for primary analysis of LSP transfers.
 Note. LSP = Louisiana Scholarship Program, NOLA = New Orleans, Louisiana.

Descriptive Statistics for Students

While the primary analysis examines the effects of all LSP transfers that qualify for our sample, we also identify a subsample of students who are in a traditional public school district that is under an active federal desegregation order. Table 1 presents descriptive statistics for both the primary analysis sample and the desegregation district subsample. There is an approximately even male/female split in both samples. African American students represent an overwhelming majority of LSP voucher users across both samples. Finally, the majority of observations come from the elementary Grades of 1 through 5.

Descriptive Statistics for Schools

To provide context for this study, we also present descriptive statistics of public and private schools in Louisiana at baseline using two widely-used segregation measures. The first measure is the segregation index, which is computed by calculating the absolute value of the difference between each

Table 1. Descriptive Statistics for Analysis Sample and Subsample of Students in Desegregation Districts.

	Analysis sample		Desegregation district subsample	
	(1)		(2)	
	<i>n</i>	%	<i>n</i>	%
Count	1,741	100	493	100
Male	839	48	238	48
Race/ethnicity				
African American	1,395	80	367	74
Hispanic	75	4	13	3
White	218	13	93	19
Other	53	3	20	4
Grade				
Grades 1-5	1,070	61	313	63
Grades 6-8	436	25	119	24
Grades 9-12	235	13	61	12

Source. Authors' calculations.

Note. The desegregation district subsample is composed of public schools in the 34 public school districts that are currently under desegregation orders (see Table A1 in the appendix for a full list).

school's percentage of minority students and the percentage of minorities in the school-aged population of the broader community (in this case the CBSA). We then use these school-level figures to generate a sector-specific, enrollment-weighted, average distance from the community average.

Table 2 examines the existing differences in school-level segregation across both the public and private school environments using the segregation index. When comparing public schools to private schools on this measure, we find that both sectors are segregated and that the private schools are slightly more segregated, on average, than the public schools. Private schools are 27.9 percentage points from the community average racial demographic, whereas public schools are 25.5 percentage points from the community average. We can also break out the data to compare private and public schools within CBSA classifications—metro- and micro-areas. While we observe no statistically significant differences between sectors in metropolitan areas, private schools are significantly more segregated than public schools in micro-politan areas, with a difference of about 6 percentage points between the two sectors.

Table 2. Enrollment-Weighted Average Distance From the Percentage Minority of the CBSA, by Sector.

	Private schools		Public schools		Comparison	
	<i>n</i>	Distance from CBSA	<i>n</i>	Distance from CBSA	Difference	<i>p</i> value
Total	332	27.92	1,278	25.46	2.46***	.01
Metro areas	282	28.32	953	27.06	1.25	.24
Micro-areas	50	25.40	325	19.75	5.65***	.01

Source. Authors' calculations using private school data from the Private School Universe Survey, 2011-2012 and public school data from the Common Core of Data's "Public Elementary/Secondary School Universe Survey," 2011-2012; CBSA values from the 5-year American Community Survey estimates, 2008 through 2012.

Note. Distance from the CBSA is an absolute value. CBSA = core-based statistical area.

***Indicates significance at the 99% confidence level.

We also use a second segregation measure to assess the private and public school context before the LSP was expanded. Frankenberg et al. (2010) suggest that schools where 90% or more of the population belongs to the same race/ethnicity are "hyper-segregated." We use this suggested benchmark to create a homogeneity index. This is a binary measure that takes on a value of one if 90% of a school's population belongs to the same race/ethnicity and zero otherwise. Table 3 examines the prevalence of school-level racial homogeneity across sectors at baseline. Private schools are significantly less likely to be racially homogeneous, as judged by this measure. Just 14% of private schools are identified as racially homogeneous, compared with 26% of public schools, a difference that is statistically significant ($p < .01$). In addition, when we provide separate comparisons by CBSA classification, we see that private schools in metropolitan areas are, once again, significantly less likely to be identified as racially homogeneous than public schools—14% compared with 29%. In micro-areas, where there are far fewer schools, there is no difference between the two sectors in terms of the proportion of racially homogeneous schools.

The school-level descriptive statistics presented here reveal that both public and private schools in Louisiana are segregated. Students in private schools are significantly more likely to attend a school whose percentage of minority students is lower than that of the surrounding CBSA. Students in public schools, meanwhile, are more likely to be enrolled in schooling environments where 90% or more of a school's population belongs to the same race or ethnicity. Given that 80% of voucher users in the first year of the

Table 3. Percentage of Schools That Are Racially Homogeneous, by Sector and CBSA Type.

	Private schools		Public schools		Comparison	
	<i>n</i>	Percent racially homogeneous	<i>n</i>	Percent racially homogeneous	Difference	<i>p</i> value
Total	332	.14	1,278	.26	-.12***	.00
Metro areas	282	.14	953	.29	-.15***	.00
Micro-areas	50	.16	325	.18	.02	.79

Source. Authors' calculations using private school data from the Private School Universe Survey, 2011-2012 and public school data from the Common Core of Data's "Public Elementary/Secondary School Universe Survey," 2011-2012; CBSA values from the 5-year American Community Survey estimates, 2008 through 2012.

Note. CBSA = core-based statistical area.

***Indicates significance at the 99% confidence level.

program were African American, this suggests that the desegregating potential of the voucher program will be high, particularly if African American LSP voucher users end up departing racially homogeneous public schools for more diverse private schools.

Research Design

We turn now to an analysis of how the LSP changes racial stratification levels within Louisiana's schools. We start by defining a benchmark, which represents the racial composition goal a school could reasonably achieve given the racial demographics of that community. For our analysis, we allow the U.S. Census Bureau to set the benchmark, by using the racial composition of the CBSA.² In total, the students in our sample attend schools in 25 different CBSAs. The school-age population in these areas ranges from 26% to 78% White, with a mean value of 56%. The largest CBSA is the New Orleans-Metairie-Kenner metropolitan area (population, approximately 226,000) and the median population for a CBSA in our sample is 13,047.

Having defined the CBSA as our community benchmark, we can now answer our primary research question, "Have LSP transfers reduced or increased racial stratification in sending and receiving schools?" We code student transfers that move a school's racial composition closer to the racial composition of the relevant CBSA as stratification-reducing transfers, whereas transfers that move a school's racial composition further from this benchmark are coded as stratification-increasing transfers. Take, for example, an African American student who leaves a public school in which

African Americans are over-represented relative to the broader community. We would code this transfer as having a stratification-reducing effect on the student's former public school. On the other hand, if the school has a lower percentage of African American students than the broader community, that transfer is coded as contributing to the increased racial stratification of the sending school. In cases where an African American student leaves a school that is 100% African American, this transfer is neither coded as stratification-reducing nor stratification-increasing as it is considered a null impact. The same logic is applied to the analysis of the transfers of students who are White or Hispanic. If a student leaves or enters a school in which all of the students have that student's ethnicity, the effect of that transfer on integration must be zero. This measure takes an intuitive approach to studying the racial stratification effects of a school choice policy and has been previously used by Greene et al. (2010), Jensen and Ritter (2009, 2010), and Ritter et al. (2016).

In the next section, we present the results of our analysis of transfers brought about by the LSP, which explicitly models the direct effects of the program on school-level racial stratification.

Results

Using student-level panel data, we document all LSP-related transfers and record the impact of the moves on school-level racial stratification. Figure 3 summarizes our primary analysis of the effects of LSP transfers on racial stratification in both sending and receiving schools. For sending schools, we identify transfers as "stratification-reducing" when a student of a given race leaves a school that is disproportionately composed of students of his same race relative to the greater CBSA. Conversely, outcomes that increase racial stratification occur when a student leaves an "integrated" school in which the proportion of his race is less than the proportion of individuals of that race in the greater CBSA. As indicated in Figure 3, the overwhelming majority (82%) of LSP student transfers reduced racial stratification in sending schools. Conversely, less than a fifth of transfers increased racial stratification in the former public schools of LSP students.

Racial stratification in receiving schools may be affected by student transfers too. We identify transfers that bring the school's racial proportions closer in line with those of the greater CBSA as reducing racial stratification and those transfers that bring the racial proportions further from those of the greater CBSA as increasing racial stratification. As Figure 3 shows, LSP transfers result in slightly more negative outcomes for receiving schools: 803 student transfers increase racial stratification compared to 665 transfers that reduce stratification, a difference that is statistically significant. Thus, while

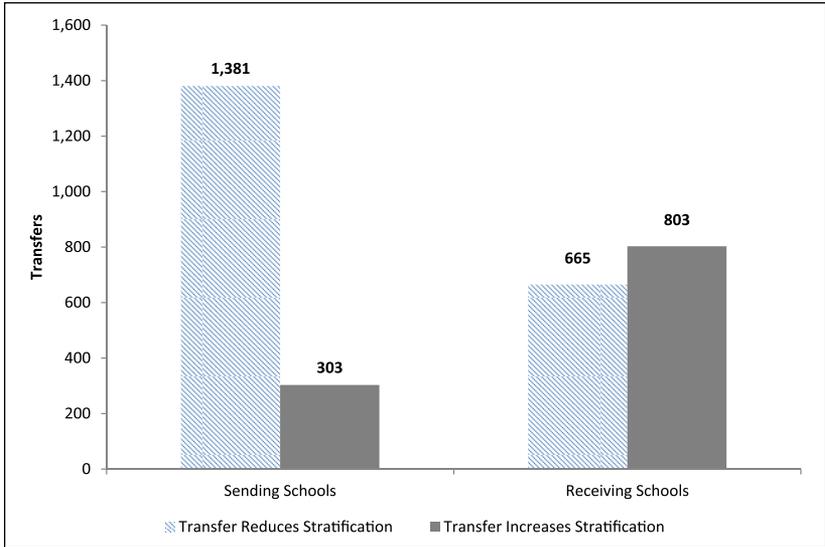


Figure 3. Impacts of voucher transfers on racial stratification.

Note. Sending schools are traditional public schools—this category excludes private New Orleans schools that were already participating in the voucher program and charter schools. Impacts on receiving schools are based on student transfers from traditional public schools only. Transfers from sending schools come close (1,684) but do not completely sum to the size of the full analysis sample (1,741) because this figure only examines transfers for the three largest racial categories. The numbers of transfers from sending and into receiving schools do not match because a small number of private schools do not appear in the Private School Universe Study, which is a voluntary NCES survey. Number of transfers excluded because sending school was 100% same race = 4 (Black), 0 (Hispanic), and 0 (White). Number of transfers excluded because receiving school was 100% same race = 32 (Black), 0 (Hispanic), and 7 (White). Chi-square tests for goodness-of-fit indicate the observed differences are significant for sending schools ($p < .01$) and significant for receiving schools ($p = .0003$). NCES = National Center for Education Statistics.

our analysis indicates large positive impacts of the LSP vouchers for traditional public schools, the effect on private receiving schools is small and negative.

In Table 4, we examine transfer impacts for three major student subgroups—White, African American, and Hispanic. Given that 80% of voucher users are African American, it is unsurprising that the majority of student transfers are for African American students. Within this group, 92% of transfers reduce stratification at the sending school, compared with 24% of White student transfers and 56% of Hispanic student transfers. In receiving schools, 45% of African American student transfers reduce stratification, compared with 28% for White students and 96% for Hispanic students.

Table 4. Impact on Racial Stratification in Sending and Receiving Schools Across the State of Louisiana.

Type of transfer	Sending		Receiving	
	<i>n</i>	%	<i>n</i>	%
African American students				
Reduce stratification	1,286	92	542	45
Increase stratification	105	8	659	55
White students				
Reduce stratification	53	24	56	28
Increase stratification	165	76	141	72
Hispanic students				
Reduce stratification	42	56	67	96
Increase stratification	33	44	3	4
Percent of overall transfers that reduce racial stratification		82		45

Note. Sending schools are traditional public schools—this category excludes private New Orleans schools that were already participating in the voucher program and charter schools. Impacts on receiving schools are based on student transfers from traditional public schools only. Transfers from sending schools do not sum to the size of the full analysis sample (1,741) because this table only examines transfers for the three largest racial categories. The numbers of transfers from sending and into receiving schools do not match because a small number of private schools don't appear in the Private School Universe Study, which is a voluntary NCES survey. Number of transfers excluded because sending school was 100% same race = 4 (Black), 0 (Hispanic), and 0 (White). Number of transfers excluded because receiving school was 100% same race = 32 (Black), 0 (Hispanic), and 7 (White). Chi-square tests for goodness-of-fit indicate the observed differences are significant for sending schools ($p < .01$) and significant for receiving schools ($p = .0003$). NCES = National Center for Education Statistics.

Subgroup Analysis

While the prior analysis focused on LSP transfers in general, it is also relevant to examine how these transfers are differentially impacting public schools in districts under federal desegregation orders. In particular, we can examine this question by restricting the primary analysis to LSP schools in the 34 public school districts that are currently under desegregation orders.³ When we restrict our analysis to this subgroup, we find that, once again, transfers significantly reduce stratification in sending schools and have null impacts on receiving schools. As Figure 4 shows, 354 LSP transfers (75% of all transfers) reduce stratification in the sending schools. In receiving schools meanwhile, there is no statistically significant difference between the number of stratification-reducing and stratification-increasing transfers.

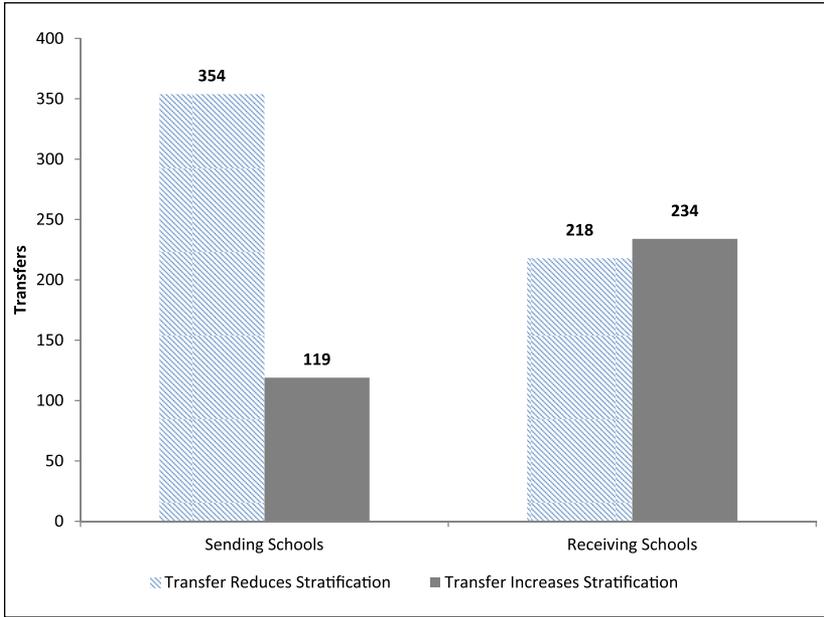


Figure 4. Impacts of voucher transfers on racial stratification in districts under desegregation orders.

Note. Sending schools are traditional public schools under federal desegregation orders. Impacts on receiving schools are based on student transfers from traditional public schools under federal desegregation orders. Number of transfers excluded because sending school was 100% same race = 0 (Black), 0 (Hispanic), and 0 (White). Number of transfers excluded because receiving school was 100% same race = 0 (Black), 0 (Hispanic), and 0 (White). Chi-square tests for goodness-of-fit indicate the observed differences are significant for sending schools ($p < .01$) and insignificant for receiving schools ($p = .4517$).

Table 5 breaks out these results by race. The same general patterns hold as before. For African American students, 87% of transfers reduce stratification at the sending school, compared with 33% of White student transfers and 38% of Hispanic student transfers. In receiving schools, 57% of African American student transfers reduce stratification, compared with just 4% for White students and 100% for Hispanic students.

In addition, these patterns of findings generally hold when we further narrow our analysis to just include the 24 districts in which the United States is listed as a party in the original desegregation cases. Specifically, LSP transfers in this subsample reduce racial stratification in sending schools 80% of the time ($p < .01$) and increase racial stratification in receiving schools 66% of the time ($p = .02$).

Table 5. Impact on Racial Stratification in Schools Under Federal Desegregation Orders.

Type of transfer	Sending		Receiving	
	<i>n</i>	%	<i>n</i>	%
African American students				
Reduce stratification	318	87	204	57
Increase stratification	49	13	154	43
White students				
Reduce stratification	31	33	3	4
Increase stratification	62	67	80	96
Hispanic students				
Reduce stratification	5	38	11	100
Increase stratification	8	62	0	0
Percent of overall transfers that reduce racial stratification		75		48

Note. Sending schools are traditional public schools under federal desegregation orders only. Impacts on receiving schools are based on student transfers from traditional public schools under federal desegregation orders. Number of transfers excluded because sending school is 100% same race is zero. Number of transfers excluded because receiving school is 100% same race is zero. Chi-square tests for goodness-of-fit indicate the observed differences are significant for sending schools ($p < .01$) and insignificant for receiving schools ($p = .4517$).

The results presented here reveal large positive impacts of the LSP vouchers for traditional public schools, which have long been the focus of federal efforts to desegregate. These positive findings hold when we restrict the sample to include only the districts under active federal desegregation orders and again when we further restrict the sample to those districts where the U.S. is a party to the suit. It is important to keep in mind, however, that although the effect on private receiving schools is small, it is negative and statistically significant in the overall sample but not significant in the samples limited to areas under desegregation orders.

Sensitivity Test: Choosing Between Two Potential Panel Measures of Racial Stratification

The racial stratification measure used in this analysis uses panel data to assess the impacts of the LSP on racial stratification, judging the direction of impacts by comparing against a racial composition benchmark. As described above, Zimmer et al. (2009) also employ a panel approach to assess the impacts of a school choice program on racial stratification levels but compare the racial composition of the receiving school to that of the

sending school instead of an external benchmark. There is one scenario in which the Zimmer et al. (2009) panel approach could be regarded as superior to the panel approach used here. That situation arises when a student leaves a public school in which his race is over-represented for a private school in which his race is also over-represented but to a greater degree. The panel approach that uses a benchmark would rate such a move as reducing racial stratification for the sending school and increasing racial stratification for the receiving school. A transfer measure without a racial composition benchmark (e.g., Zimmer et al., 2009), however, would assign a single rating to that move—judging it as increasing racial stratification, which is perhaps more intuitive to many people. Because readers may disagree over which approach is superior and to ensure transparency regarding our choice of measure, we provide Table A2 in the appendix, which breaks apart all potential scenarios in which a student transfer is rated as “stratification-reducing” in the sending school. The problematic example is Scenario 6, when the student departs a sending school in which his race is over-represented (thus, being rated as stratification-reducing by our panel measure) and arrives in a private school in which his race is even more over-represented (thus, being rated as stratification-increasing by our panel measure). This scenario captures only 16% of all transfers, thus reducing any concerns that the choice of measure is driving our results.

Limitations

There are at least three limitations that restrict the generalizability of the methods and findings presented here. First, the measure employed in this article to calculate the racial stratification impacts of the voucher on sending schools includes all students who depart a public school. Technically, it would be possible for this sample to include students who drop out of school or move out of the state entirely. We avoid such an error in this study by limiting the sample to those students who actually used an LSP voucher and, thus, arrived in a participating private school in the fall of 2012. Researchers seeking to imitate our methods should beware of this limitation of the integration measure used here and restrict their sample appropriately.

Second, integration is measured in this article using a measure that rates transfers in a binary fashion—as either stratification-reducing or stratification-increasing. The benefit of this approach is that it is easy to understand and interpret, but it could be criticized for equally weighting a transfer from a school in which the student’s race is only slightly under-represented and a transfer from a school in which the student’s race is dramatically under-represented. It is possible that a more sophisticated measure could be employed that would weight transfers and express the overall stratification impact on a

continuous scale, although it is not clear how one would interpret the numbers produced by such a measure.

Finally, our analysis of the effect of school choice on racial stratification in schools draws upon a single private school voucher program in a particular state. Thus, our study has limited external validity. The LSP is heavily targeted to low-income students in perennially under-performing schools, which at least partially explains the fact that most of the program participants are African American students in public schools that are overwhelmingly African American in their composition. In other words, the LSP appears to have been designed in ways that all but assure that its effect on traditional public schools will be to better integrate them racially. Not every school choice program is designed that way. Second, Louisiana is a distinctive U.S. state in its demographics, history, and culture. It is possible that even a program designed exactly like the LSP might have different integration effects in a state unlike Louisiana, such as Utah or Rhode Island.

Conclusion

This article presents an analysis of the impacts of the LSP on racial stratification in Louisiana public and private schools. Overall, we find large, positive reductions in racial stratification in public schools that are consistent across our samples and small increases in racial stratification in private schools that are not consistent across our samples as a result of this school voucher program.

Our primary analysis uses student-level panel data to track individual student transfers as they switch from the public to the private sector. Outcomes that reduce racial stratification occur when a student of a given race leaves a school in which his race is over-represented relative to the greater CBSA. Conversely, outcomes that increase racial stratification occur when a student leaves a school in which his race is under-represented relative to the CBSA. In keeping with Jeynes' (2000) prediction that school choice would benefit minorities and the poor the most, this analysis reveals that the vouchers used by the low-income, mostly minority recipients have positively impacted public school desegregation efforts. By leaving schools in which they were racially over-represented, 82% of voucher users reduced racial stratification in Louisiana public schools, bringing those public school racial populations closer in line with those of the broader communities. Positive impacts are particularly sizable for African American students, who constitute the majority of voucher recipients. Ninety-two percent of LSP transfers for African American students result in positive outcomes, a reduction in racial stratification, for sending schools in the overall transfer sample. At the same time, student transfers have, in general, a small, negative impact on the schools they transfer to by increasing racial stratification. Just 45% of all transfers reduced racial stratification in the receiving schools.

In addition, an analysis of the subgroup of students leaving districts under active federal desegregation orders demonstrates that transfers significantly reduce racial stratification in these 34 public school districts, the very districts that have been the subject of the greatest segregation concerns. In total, 75% of transfers reduce racial stratification in the sending schools in this subgroup. Meanwhile, the impact on receiving schools in this subgroup is statistically equivalent to zero.

While acknowledging that LSP transfers have resulted in a small, negative impact on private school racial stratification, the results of this study allow us to confidently conclude that the LSP has not harmed desegregation efforts in Louisiana public schools. To the contrary, public schools in Louisiana, including those public schools under active desegregation orders, are significantly less racially stratified as a direct result of the statewide school voucher program.

Appendix

Table A1. Public School Districts Under Federal Desegregation Orders.

District name	U.S. is a party to the desegregation order
Avoyelles Parish	Yes
Bienville Parish	Yes
Bossier Parish	Yes
Caddo Parish	Yes
Catahoula Parish	Yes
Claiborne Parish	Yes
Concordia Parish	Yes
Desoto Parish	Yes
Franklin Parish	Yes
Jackson Parish	Yes
Lasalle Parish	Yes
Lincoln Parish	Yes
City Of Monroe School District	Yes
Plaquemines Parish	Yes
Pointe Coupee Parish	Yes
Richland Parish	Yes
Sabine Parish	Yes
St. Helena Parish	Yes
St. James Parish	Yes
St. John The Baptist Parish	Yes
St. Martin Parish	Yes
St. Mary Parish	Yes

(continued)

Table A1. (continued)

District name	U.S. is a party to the desegregation order
St. Tammany Parish	Yes
West Carroll Parish	Yes
Acadia Parish	No
Allen Parish	No
Assumption Parish	No
Iberia Parish	No
Jefferson Davis Parish	No
Lafourche Parish	No
Madison Parish	No
Ouachita Parish	No
Tangipahoa Parish	No
Winn Parish	No

Source. United States' Memorandum in Support of its Motion for Further Relief, *Brumfield v. Dodd*, Civ. A. No. 71-1316, p. 4.

Table A2. Comparing Methodologies: Transfer Measures of Integration, With and Without a Racial Benchmark.

		Our approach: Using a benchmark		Zimmer et al. (2009) approach: No benchmark	
		Impact on sending school		Net impact	
		Transfer rating	Count	Proportion	Transfer rating
1.	$R^* > R_0 > R_1$	Bad	74	.05	Good
2.	$R_0 > R^* > R_1$	Good	536	.34	Good
3.	$R_0 > R_1 > R^*$	Good	504	.32	Good
4.	$R^* > R_1 > R_0$	Bad	70	.04	Bad
5.	$R_1 > R^* > R_0$	Bad	141	.09	Bad
6.	$R_1 > R_0 > R^*$	Good	255	.16	Bad
Total			1,580	1.00	

Note. R_0 denotes percent of race R in sending school; R_1 denotes percent of race R in receiving school; R^* denotes benchmark. Only the subset of students who were present in the analyses of impacts on *both* sending and receiving schools are included. Scenario 6 represents the problematic situation in which a student leaves a public school in which his race is over-represented for a private school in which his race is also over-represented.

Acknowledgments

We gratefully acknowledge Jay P. Greene and Robert M. Costrell for their extensive helpful comments and the Louisiana Department of Education for their cooperation and assistance with providing the necessary data to conduct the analyses.

Authors' Note

The content is solely the responsibility of the authors and does not necessarily represent the views of the Smith Richardson Foundation, North Carolina State University, Tulane University, or the University of Arkansas.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Research reported in this article was supported by the Smith Richardson Foundation.

Notes

1. Twenty-four percent of voucher users actually crossed their district boundary to attend a private school in a neighboring district through the program in its first year.
2. Core-based statistical areas (CBSA) are defined by the U.S. Census Bureau, and are broken into two types. Metropolitan statistical areas represent geographical areas with populations of at least 50,000. Micropolitan statistical areas contain populations of between 10,000 and 50,000. By restricting our analysis to CBSAs, we exclude 62 students from our sample who live in rural counties that fall outside of metropolitan or micropolitan areas.
3. See Table A1 in the appendix for the list of school districts under federal desegregation orders

References

- Altonji, J. G., Huang, C. I., & Taber, C. R. (2015). Estimating the cream skimming effect of school choice. *Journal of Political Economy*, 123, 266-324.
- Berliner, D., Farrell, W., Huerta, L., & Mickelson, R. (2000). *Will vouchers work for low-income students?* (Report No. CERAI-00-31). Milwaukee, WI: Center for Education Research, Analysis, and Innovations. Retrieved from <http://nepc.colorado.edu/files/cerai-00-37.htm>
- Bifulco, R., & Ladd, H. F. (2006). School choice, racial segregation, and test-score gaps: Evidence from North Carolina's charter school program. *Journal of Policy Analysis and Management*, 36, 31-56.

- Burgess, S., Wilson, D., & Lupton, R. (2005). Parallel lives? Ethnic segregation in schools and neighbourhoods. *Urban Studies*, 42, 1027-1056.
- Clotfelter, C. T. (1999). Public school segregation in metropolitan areas. *Land Economics*, 75, 487-504.
- Cobb, C. D., & Glass, G. V. (1999). Ethnic segregation in Arizona charter schools. *Education Policy Analysis Archives*, 7(1). Retrieved from <http://epaa.asu.edu/ojs/article/view/536>
- Forster, G. (2006a). *Segregation levels in Cleveland public schools and the Cleveland voucher program*. Indianapolis, IN: The Milton and Rose D. Friedman Foundation and the Buckeye Institute.
- Forster, G. (2006b). *Segregation levels in Milwaukee public schools and the Milwaukee voucher program*. Indianapolis, IN: The Milton and Rose D. Friedman Foundation.
- Frankenberg, E., & Lee, C. (2002). *Race in American public schools: Rapidly resegregating school districts*. Cambridge, MA: The Civil Rights Project, Harvard University. Retrieved from <http://civilrightsproject.ucla.edu/research/k-12-education/integration-and-diversity/race-in-american-public-schools-rapidly-resegregating-school-districts>
- Frankenberg, E., Siegel-Hawley, G., & Wang, J. (2010). *Choice without equity: Charter school segregation and the need for civil rights standards*. Los Angeles: The Civil Rights Project, University of California, Los Angeles. Retrieved from <http://civilrightsproject.ucla.edu/research/k-12-education/integration-and-diversity/choice-without-equity-2009-report/frankenberg-choices-without-equity-2010.pdf>
- Frendeway, M., Sawatka, K., Marcavage, W., Carney, K., Martinez, K., & Dauphin, P. (2015). *School choice yearbook 2014-15: Breaking down barriers to school choice*. Washington, DC: Alliance for School Choice. Retrieved from http://afcgrowthfund.org/wp-content/uploads/2015/04/AFC_2014-15_Yearbook.pdf
- Friedman, M. (1955). The role of government in education. In R. A. Solo (Ed.), *Economics and the public interest* (pp. 123-144). New Brunswick, NJ: Rutgers University Press.
- Fuller, H., & Greiveldinger, D. (2002). *The impact of school choice on integration in Milwaukee private schools*. Milwaukee, WI: American Education Reform Council.
- Fuller, H., & Mitchell, G. (1999). *The impact of school choice on racial and ethnic enrollment in Milwaukee private schools* (Current Education Issues No. 99-5). Marquette University Institute for the Transformation of Learning. Retrieved from <http://eric.ed.gov/?id=ED441903>
- Fuller, H., & Mitchell, G. (2000). *The impact of school choice on integration in Milwaukee private schools* (Current Education Issues No. 2000-02). Marquette University Institute for the Transformation of Learning. Retrieved from <http://eric.ed.gov/?id=ED443939>
- Galston, W. (2004). Civic republicanism, political pluralism, and the regulation of private schools. In P. J. Wolf & S. Macedo (Eds.), *Educating citizens: International perspectives on civic values and school choice* (pp. 315-323). Washington, DC: Brookings Institution Press.

- Garcia, D. R. (2008). Academic and racial segregation in charter schools: Do parents sort students into specialized charter schools? *Education and Urban Society*, 40, 590-612.
- Glenn, C. L. (2011). *Contrasting models of state and school*. New York, NY: Continuum.
- Greene, J. P. (2005). Choosing integration. In J. T. Scott (Ed.), *School choice and diversity: What the evidence says* (pp. 27-41). New York, NY: Teachers College Press.
- Greene, J. P. (2011). *Why America needs school choice*. New York, NY: Encounter Books.
- Greene, J. P., Mills, J. N., & Buck, S. (2010). *The Milwaukee Parental Choice Program's effect on school integration* (Report No. 20). Fayetteville: School Choice Demonstration Project, University of Arkansas.
- Greene, J. P., & Winters, M. A. (2007). An evaluation of the effect of DC's voucher program on public school achievement and racial integration after one year. *Catholic Education: A Journal of Inquiry and Practice*, 11, 83-101.
- Gutmann, A. (2002). Assessing arguments for school choice: Pluralism, parental rights, or educational results? In A. Wolfe (Ed.), *School choice: The moral debate* (pp. 126-148). Princeton, NJ: Princeton University Press.
- Henig, J. R. (1994). The call for choice and radical reform. In J. R. Henig (Ed.), *Rethinking school choice: Limits of the market metaphor* (pp. 3-25). Princeton, NJ: Princeton University Press.
- Henig, J. R. (1996). The local dynamics of choice: Ethnic preferences and institutional responses. In B. Fuller, R. F. Elmore, & G. Orfield (Eds.), *Who chooses? Who loses? Culture, institutions, and the unequal effects of school choice* (pp. 95-117). New York, NY: Teachers College Press.
- Jensen, N. C., & Ritter, G. W. (2009). *An analysis of the impact of charter schools on desegregation efforts in Little Rock, Arkansas* (Arkansas Education Report Vol. 6, No. 3). Fayetteville: Office for Education Policy, University of Arkansas.
- Jensen, N. C., & Ritter, G. W. (2010). *Updated analysis of racial segregation in Pulaski County charter and traditional public schools* (Arkansas Education Report Vol. 7, No. 1). Fayetteville: Office for Education Policy, University of Arkansas. Retrieved from http://www.uark.edu/ua/oep/AER/7_1_Updated_Analysis_of_Racial_Segregation_in_Pulaski_County_Charter_and_Traditional_Public_Schools.pdf
- Jeynes, W. (2000). Assessing school choice: A balanced perspective. *Cambridge Journal of Education*, 30, 223-241.
- Jeynes, W. (2014a). *School choice: A balanced approach*. Santa Barbara, CA: Praeger.
- Jeynes, W. (2014b). School choice and the achievement gap. *Education and Urban Society*, 46, 163-180.
- Lacireno-Paquet, N., Holyoke, T. T., Moser, M., & Henig, J. R. (2002). Creaming versus cropping: Charter school enrollment practices in response to market incentives. *Educational Evaluation and Policy Analysis*, 24, 145-158.

- Macedo, S., & Wolf, P. J. (2004). Introduction: School choice, civic values, and problems of policy comparison. In P. J. Wolf & S. Macedo (Eds.), *Educating citizens: International perspectives on civic values and school choice* (pp. 1-28). Washington, DC: Brookings Institution Press.
- Peterson, P. E. (2006). *Choice and competition in American education*. Lanham, MD: Rowman & Littlefield.
- Ritter, G. W., Jensen, N. C., Kisida, B., & Bowen, D. H. (2016). Urban school choice and integration: The effect of charter schools in Little Rock. *Education and Urban Society*, 48(6), 535-555. doi:10.1177/0013124514546219
- Ritter G. W., Rush, A., & Rush, J. (2002). How might school choice affect racial integration in schools? New evidence from the ECLS-K. *The Georgetown Public Policy Review*, 7(2), 125-136.
- Willms, D. J., & Echols, F. H. (1993). The Scottish experience of parental school choice. In M.E. Rasell & R. Rothstein (Eds.), *School choice: Examining the evidence* (pp. 49-68). Washington D.C.: Economic Policy Institute.
- Zimmer, R., Gill, B., Booker, K., Lavertu, S., Sass, T., & Witte, J. (2009). *Charter schools in eight states: Effects on achievement, attainment, integration, and competition*. Santa Monica, CA: RAND.

Author Biographies

Anna J. Egalite is an assistant professor in the Department of Educational Leadership, Policy, and Human Development at North Carolina State University. She has published original research on the competitive effects of parental school choice programs as well as the effects of teacher reforms on the educational outcomes of disadvantaged students.

Jonathan N. Mills is a postdoctoral fellow with the Education Research Alliance for New Orleans at Tulane University. His research interests include the effect of school choice on student achievement and attainment, and his work currently focuses on an experimental evaluation of the Louisiana Scholarship Program.

Patrick J. Wolf is distinguished professor of education policy and 21st century endowed chair in school choice in the Department of Education Reform at the University of Arkansas. As principal investigator of the School Choice Demonstration Project, he has led or is leading major studies of school choice initiatives including longitudinal evaluations of school voucher programs in Washington, DC; Milwaukee, WI; and the state of Louisiana.