

Paying for School Choice: Availability Differences among Local Education Markets

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Abstract

In the context of school zone discontinuity based on parents' educational level, housing price, and household income, empowering parents to choose children's schools with their own hands has the potential to improve overall access to education by weakening geographical advantages or disadvantages and opening up invisible boundaries between communities. Though recent school choice proposals seem aligned with access to education, little research has paid attention to potential access to and actual utilization of the federal government-initiated choice program in competitive markets. This paper, by representing the geographic distribution of choice availability in a segregated metropolitan area, explores whether or not the markets for the public school choice provision under the No Child Left Behind Act of 2001 are ready to serve students at chronically underperforming schools. This study finds that the public school choice provision under the NCLB constructs unequal choice settings between school districts.

Keywords Access; Availability; No Child Left Behind Act of 2001; Public school choice; Market

Access is a major issue in education policy and is most frequently examined in research on public schools. For instance, some scholars who have studied enrolment patterns have uncovered that minority and disadvantaged students struggle with ac-

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cess to diverse and integrated school environments (Denton, 1995; Reardon, Grewal, Kalogrides, & Greenberg, 2012; Rivkin & Welch, 2006; W.J. Wilson, 2012). Others have indicated irreconcilable disparities in school funding and resources between school districts, stemming from the financial structure of traditional public schools that rely on property and income taxes from the area in which they are located (Bodine et al., 2008; Kenn, 2001; D.E. Mitchell, Batie, & Mitchell, 2010; Reardon & Yun, 2001). Such differences often result in widening academic achievement gaps (Rothwell, 2012). The concerns about and evidence of inequitable access to education provide grounds for regarding a choice scheme as an effective mechanism to shape environments for equally accessible education. This expectation stimulates the broad implementation and rapid expansion of school choice initiatives entangled with market principles. Among a variety pack of choice programs across the United States, the public school choice provision under the No Child Left Behind Act of 2001 (NCLB) may be the largest and most inclusive school choice program. Nearly 70 percent of total U.S. public schools are classified as Title I schools, and the public school choice provision is the very first sanction imposed by NCLB on Title I schools that fail to satisfy the Adequate Yearly Progress (AYP). Yet little work has been done on examining what the choice markets generated by NCLB can tell us with regard to access. This paper, by representing the geographic distribution of choice availability in a segregated metropolitan area explores whether or not the markets for the public school choice provision under NCLB are ready to serve students at chronically underperforming schools.

Access and school choice

Although access is a widely used term in education, it is not a very well defined concept. In order to clarify the definition of access in current studies on social justice, equity, and equality in education markets, this study borrows the taxonomy of access from the health care system, where both public and private interests have coexisted as quasi-markets for longer than they have in the education sector. On the basis of the relationship between demand and supply in markets, access is defined as “the degree of fit between the clients and the system” (Cromley & McLafferty, 2011; Gulliford et al., 2002; Penchansky & Thomas, 1981). Access is categorized into five dimensions: availability, accessibility, accommodation, affordability, and acceptability. The first two dimensions of access—availability and accessibility—are grouped into spatial dimension of access, whereas the last three dimensions account for non-spatial access (Andersen, 1995; Estabrooks, Lee, & Gyurcsik, 2003; Guagliardo, 2004). Given that these non-spatial dimensions of access can hardly be examined if there is a lack of schools to choose from markets, availability and accessibility are generally regarded as the first conditions of access for the purpose of demonstrating the adequacy of the supply in markets (Fortney, Rost, & Warren, 2000).

Though recent school choice proposals seem aligned with access to education, the initial proposal of school choice was not designed to improve access to education for all children. Rather, the original arguments for school choice paid more attention to how to liberate students and their families and create competitive environments through deregulation. From the lens of market theorists who emphasize the impor-

tance of the relationship between parents as demand and schools as supply, the current education systems are highly standardized and uniform (Chubb & Moe, 1990; Walberg & Bast, 2003). Insufficient competition and limited parental right to choose hinder the existing public schools from satisfying diverse preferences of heterogeneous families and from concerning themselves with the needs of marginalized, or even sometimes of gifted, students. Therefore, proponents of school choice have suggested providing opportunities to select alternative schools in an attempt to improve a potentially poor fit between students and schools. Specifically, they have argued that the expansion of school choice increases the correspondence between what families really want and what schools actually offer, since money incentives yielded by student transfers force schools to find a market niche and innovate in order to attract and keep students. Such a shift in emphasis from individual rights to equity for all in school choice is predicted to usher in an era in which schools are responsive to various needs and interests of parents and students. This process is expected to spontaneously help those students who are typically underserved by the public school system to become emerging and important customers (Lubienski, 2005; Du Pont, Goodman, & Steiger, 2001).

The more fundamental reason that access matters in school choice policies is that school choice challenges the traditional enrolment-by-residence scheme. Widely adopted in many countries including the U.S., the enrolment policies employed to assign students to the closest schools do not question access—for example, whether school admission procedures are fair or if commuting times and distances are appropriate for children. Yet the boundaries of school district borders and attendance zones, which play a decisive role in where to attend, are not neutrally drawn, but politically gerrymandered in close association with uneven human geographies (Denton, 1995; Lauder et al., 1999; D.E. Mitchell et al., 2010; Reardon, Yun, & Eitle, 2000; Ryan, 1999; Yinger, 1997). In distinction to the landmark hypothesis of “voting with one’s feet” (Tiebout, 1956), communities have been isolated or clustered according to socioeconomic and ethnic attributes, such as race, income level, job, and educational attainment (Bayer, Fang, & McMillan, 2005; Echenique & Fryer, 2007; Johnston, Poulsen, & Forrest, 2007; Massey & Denton, 1993; W.J. Wilson, 2012). An inability to afford property taxes and housing prices in one neighborhood not only obstructs entry to a new community, but also stratifies access to public services provided by local governments, since the quantity and quality of local public goods depend upon residents’ taxes (Nechyba, 2010; E.K. Wilson, 2011). The segmented housing patterns reproduced by structural and institutional features broaden disparities in peer influences and social networks between and within neighborhoods, as well as in access to and utilization of public services (Charles, Dinwiddie, & Massey, 2004; Coulton & Pandey, 1992; Ellen & Turner, 1997; Galster & Killen, 1995; Lichter, Parisi, & Taquino, 2012; Mayer, 1996; McPherson, Smith-Lovin, & Cook, 2001; Rivkin & Welch, 2006; Sampson, Morenoff, & Earls, 1999; Swanstrom, Dreier, & Mollenkopf, 2002). Furthermore, strong local control over the school system in the U.S. has meant that local governments have often exploited their legal authority to maintain the status quo, for instance by shaping school zones and refusing to build new schools for integration (Benjamin, 2012; Dougherty, 2012;

Erickson, 2012; McDermott, 1999; Weir, 1996; E.K. Wilson, 2011). If school zone discontinuity according to parents' educational level, housing price, and household income has restricted many students' access to better-resourced and more diverse schools (Bayer & McMillan, 2012; Black, 1999; Bodine et al., 2008; Gibbons & Machin, 2006; Kenn, 2001; D.E. Mitchell et al., 2010; Reardon & Yun, 2001), then empowering parents to choose children's schools with their own hands has the potential to improve overall access to education by weakening geographical advantages or disadvantages and opening up invisible boundaries between communities.

Local education markets for the public school choice provision

The Title I program, which provides the largest federal funding for elementary and secondary education, was intended to support students in high-poverty districts and schools—where more than three-fourths of total students were provided free or reduced-price lunches—in order to assist them in acquiring proficiency in reading and mathematics. NCLB is devised for the same goal as the Title I program, but takes a slightly different approach, placing more weight on accountability. Under NCLB, the state governments measure students' academic achievement and their progress every year, and these results, called adequate yearly progress (AYP), are utilized as critical evidence for whether individual schools are failing or not. Schools failing to satisfy AYP face the five-step sanctions that embrace market principles such as choice and competition; this stands in contrast to the past, when they simply received sizable financial aids. Under the first sanction, the public school choice provision under NCLB compels a district to offer students the opportunity to choose another school, *within* students' district boundaries, that has not been identified as in need of improvement; this opportunity is offered to any students enrolled in repeatedly underperforming Title I schools for two consecutive years. This student transfer policy rests on the assumption that if students are empowered to opt out of repeatedly underperforming schools, the threat of losing students encourages schools to innovate and compete with others. Eventually, the public school choice provision under NCLB may function as a key vehicle for offering better access to education for students trapped in disadvantaged schools within at-risk communities. Still, little research has paid attention to potential access to and actual utilization of the federal government-initiated choice program in competitive markets.

Provided that two dimensions of access—availability and accessibility—are the main preconditions for improving comprehensive access to education through choice mechanisms, the public school choice provision, where its choice set is restricted within the same district, brings about very few changes in spatial accessibility. Instead, research on availability can account for access in terms of the utilization of the public school choice provision. In view of the regulation that choice sets are restricted within school district zones, the public school choice provision under NCLB substantially relies on the number of schools not under the improvement status within the same school district boundaries. However, given disparities between local education markets, we need empirical evidence to support or challenge the claim that students eligible for the first federal sanction of the NCLB adequately shop for another school within a given choice set. If one school district has more underperform-

ing schools than outperforming ones, students at chronically failing schools in the school district, though eligible for the public school choice provision, have fewer school options, and some of the students with few school options must remain in the low-performing schools. In practice, school districts that have more failing schools are less likely to have any non-failing schools (Clotfelter, 2004), and many urban school districts have few schools not “in need of improvement” under NCLB (Brown, 2004). Moreover, a number of secondary school districts that often operate only a few middle and high schools within their boundaries have struggled to offer adequate alternatives to Title I school students (Stecher et al., 2010; U.S. Department of Education, 2009).

Of course, the government allows students to transfer to schools in neighboring school districts under the agreement between sending and receiving school districts, when there is no available school to choose within school districts. However, in Illinois for instance, a receiving school district is “under no obligation to enter into a cooperative agreement” and can decline such agreements for reasons such as its enrolment capacity (Illinois State Board of Education, 2012). In light of the historical court cases ruling that the federal government basically has no constitutional authority in education, the public school choice provision at the federal level is nearly powerless to either create markets beyond existing local education authorities or require school districts to exchange students between them. In other words, even though NCLB provides students at repeatedly underperforming schools with *de jure* chance to leave the schools, *de facto* parental choice is not necessarily equitable for all because the public school choice setting is dependent on local education markets as defined by school districts. Geographic boundaries such as school districts and school attendance zones still act as substantial barriers to utilizing the public school choice provision and accessing choice settings in terms of adequacy (Penchansky & Thomas, 1981).

A case study of the Chicago metropolitan area

In order to investigate whether access to the public school choice provision under NCLB is constrained by the lack of meaningful and attractive alternatives within the local education market, this study examines choice availability, which is referred to as volume and type of institutional services and resources, during the period between the 2005–06 school year and the 2011–12 school year. The illustration of access gaps among school districts in a metropolitan area with highly segregated housing markets can shed light on the readiness of local education markets to serve the federal school choice program. For this, the following research questions are addressed: 1) Does the spatial pattern of choosable schools have any relationship with the geographic distribution of housing characteristics, in terms of availability? and 2) does the choice availability present any differences from the first neighboring school districts?

This study focuses on the market for primary schools serving pre-K to eighth graders in Cook County, Illinois. Primary school students can transfer to and access neighboring school districts, because primary school districts cover small areas and have many schools, in comparison with the market for secondary schools, in which the school district is so large that students are required to travel further (Gibbons &

Machin, 2006; Gibbons, Machin, & Silva, 2013). One hundred seventeen school districts in Cook County run about 1,000 schools serving students from pre-kindergarten through grade eight, about one-fourth of the total number of Illinois schools. The City of Chicago School District No. 299 (CPS), the third largest urban school district in the U.S., is located in Cook County. The AYP information for each school between the 2005–2006 school year and the 2011–2012 school year was retrieved from the school report cards that the Illinois State Board of Education open via the Internet. In the 2011–2012 school year, 27.2 percent of the total primary schools in Cook County met overall AYP, and about 600 schools were labeled as in need of improvement for failing to meet the state standards for more than two consecutive years. Since the 2002–2003 school year, the first year of NCLB, one-third of the Cook primary schools have been classified as the status of no need of improvement. The number of repeatedly underperforming schools has increased gradually since the 2007–2008 school year (see Figure 1). Students who enroll in Title I schools that chronically fail to meet AYP would be eligible to enroll in one of the 40 percent of primary schools not in need of improvement, but only if the market for the public school choice provision under NCLB was unrestricted by school district boundaries. This study estimates the degree of choice availability by considering the ratio of total public schools in a district to schools not in need of improvement; using these estimates, it suggests how local markets are arranged for the utilization of the public school choice provision. In addition, this study proposes another potential choice set consisting of the first adjacent school districts of a school district; this alternative reveals differences in choice availability across school districts.

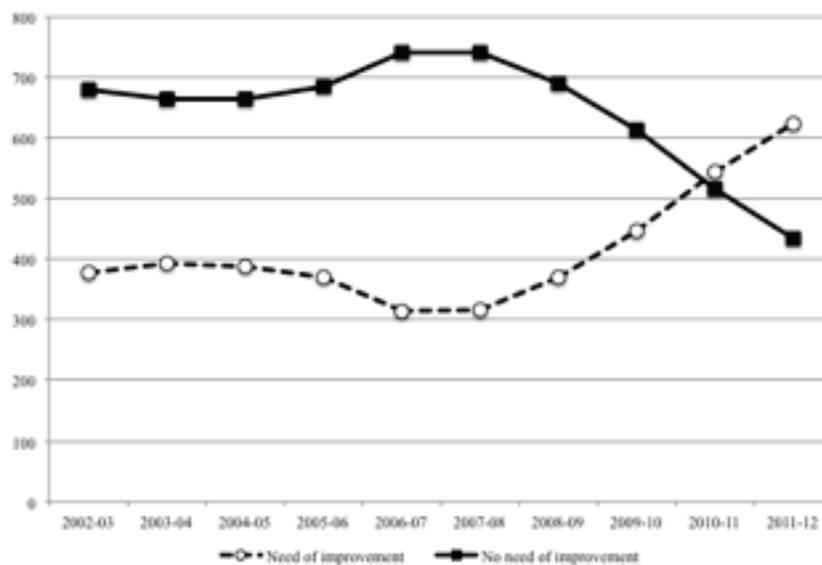


Figure 1. The Previous Record of the Cook County Schools

The Chicago metropolitan area within Cook County has a population of over 9.5 million and is known as a highly segregated area in the United States. Although the recent population decline in the Chicago metropolitan area has contributed to the positive change in segregated housing patterns since the 1980s (Iceland, Weinberg, & Steinmetz, 2002), the city of Chicago and its surrounding areas still rank among the ten most segregated metropolitan areas in the United States. African-

Americans and immigrants are concentrated into urban areas, whereas Whites with relatively higher family income levels reside in suburbia (Farley, Steeh, Jackson, Krysan, & Reeves, 1993; Iceland et al., 2002; Logan, 2011). To illuminate community characteristics discontinuously varying at school district boundaries, this study is grounded in a large volume of research on housing patterns using demographic and socioeconomic factors (Bayer & McMillan, 2012; Black, 1999; Bornstein & Bradley, 2003; Darden & Kamel, 2000; Krieger et al., 2002; Krivo, Peterson, & Kuhl, 2009; Reardon, Fox, & Townsend, 2015). Given that racial preferences and urban structures do not act alone in shaping housing patterns (Clark, 1986; Iceland & Wilkes, 2006), twelve housing features in school districts were extracted from the 2006–2010 American Community Survey five-year estimates of the U.S. Census Bureau:

- Proportion of occupied housing units (OCCUPIED)
- Proportion of housing units occupied by owner (OWNER)
- Proportion of only White householders (ONLYWHITE)
- Proportion of only African-American householders (ONLYBLCK)
- Proportion of householders with Hispanic or Latino origin (HSPN)
- Proportion of housing units with fewer than 1.00 occupants per room
- Median number of rooms (ROOMS)
- Median built year of housing units (BUILTYR)
- Proportion of housing units with telephone service (TELEPHONE)
- Proportion of housing units with more than one vehicle available (CAR)
- Median value of owner-occupied housing units (VALUE)
- Median contract rent of renter-occupied housing units (RENT)

Along with ordinary least squares regressions (OSL) identifying the relationship between the availability of the public school choice options and the selected housing features within a given school district, a mixed effects model (interchangeably called a multi-level modeling and hierarchical linear model) is used to clarify the connection between geographically-constrained choice availability and disparities in neighborhood housing characteristics. In particular, this study looks at the change over time by using either linear, quadratic, or cubic growth models.

Public school choice setting in Cook County

The policy effect of the public school choice provision is determined by the availability of an adequate number of school options, i.e., how many schools have met the state academic standards for at least two years within a school district. Based on the fourth column of Table 1, students in two school districts would have to remain at their schools because all schools within the school districts were identified as in need of improvement in the 2005–2006 school year. The number of school districts without any NCLB-sanctioned schools has markedly decreased every year, while the number of school districts with no available school options increased by 23 school districts in the 2010–2011 school year. The last column of Table 1 shows that most of the school districts that offer the public school choice provision to students are adjacent to at least one school district with better choice availability. About eighty

percent of the school districts that are compelled to operate student transfer policies under NCLB physically neighbor school districts with lower ratios of chronically underperforming schools. Yet since none of the Illinois school districts that are currently entered into an intergovernmental agreement on exchanging students between districts are located in Cook County, it is impossible for students with only a few public school options in their district to access a wider range of public school choices.

Table 1. AYP record of Cook County primary school districts

Year	Total number of school districts	School districts with not-sanctioned schools	School districts with only sanctioned schools	School districts adjacent to districts with not-sanctioned school
2005–2006	117	85 (72.6%)	2 (6.3%)	29 (90.6%)
2006–2007	117	86 (73.5%)	3 (9.7%)	26 (83.9%)
2007–2008	117	88 (75.2%)	3 (10.3%)	25 (86.2%)
2008–2009	117	79 (67.5%)	4 (10.5%)	34 (89.5%)
2009–2010	117	66 (56.3%)	9 (17.6%)	44 (86.3%)
2010–2011	117	54 (46.2%)	15 (23.8%)	55 (87.3%)
2011–2012	117	45 (38.5%)	23 (31.9%)	62 (86.1%)

Through the examination of choice availability between the 2005–2006 school year and the 2010–2011 school year, the following table points out the connection with housing features in individual school districts. Table 2 of the OLS regression results for choice availability by school year elucidates the statistically significant relationships between choice availability and the percent of occupied housing units and the percent of only White householders. A higher proportion of only White householders is correlated with more available school options in the school districts. The lower vacancy rate contributes to increasing choice availability, except in the 2010–2011 school year. Though inconsistent results are detected in several school years, the percent of housing units with telephone service improves the likelihood that children in the school district have more school options using the public school choice provision under NCLB. In particular, a one-unit increase in the logged median contract rent results in a 0.5-point gain in choice availability. Yet the proportion of housing units with fewer than 1.00 occupants per room has a negative impact on the ratio of available schools to total schools.

Table 2. OLS regression results for choice availability by school year

	2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
OCCUPIED	2.700	***	3.379	***	2.159	***	1.253	**	1.386	**	-1.056	**
	(0.462)		(0.440)		(0.520)		(0.552)		(0.558)		(0.463)	
OWNER	-0.494	*	-0.843	***	-0.486		1.079	***	-0.168		-0.503	**
	(0.268)		(0.273)		(0.341)		(0.290)		(0.293)		(0.230)	

Table 2. (continued)

	2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
ONLYWHITE	1.411	***	3.280	***	2.228	***	2.201	***	2.564	***	1.379	***
	(0.482)		(0.506)		(0.605)		(0.401)		(0.386)		(0.294)	
ONLYBLCK	0.600		2.772	***	1.969	***	1.206	***	1.952	***	0.317	
	(0.520)		(0.544)		(0.650)		(0.408)		(0.392)		(0.306)	
HSPN	-0.260		1.068	***	1.048	**	-0.719	***	-0.281		-1.219	***
	(0.368)		(0.401)		(0.500)		(0.266)		(0.270)		(0.216)	
LESS-CROWDED	-4.294	***	-4.097	***	-0.646		-6.446	***	-6.869	***	-4.202	***
	(1.251)		(1.209)		(1.432)		(1.332)		(1.370)		(1.085)	
ROOMS	0.114	*	-0.065		0.069		-0.037		0.006		0.313	***
	(0.065)		(0.068)		(0.085)		(0.072)		(0.068)		(0.060)	
BUILTYR	0.009	***	-0.003		0.000		-0.014	***	-0.003		-0.007	***
	(0.003)		(0.003)		(0.005)		(0.003)		(0.003)		(0.002)	
TELEPHONE	-2.388	***	2.868	***	3.676	***	0.526		2.246	**	1.906	**
	(0.818)		(0.823)		(1.022)		(0.985)		(0.978)		(0.748)	
CAR	0.126		0.736	*	-0.197		-0.012		-0.212		0.268	
	(0.427)		(0.374)		(0.494)		(0.453)		(0.462)		(0.374)	
VALUE (logged)	-0.075		-0.452	***	-0.349	***	-0.567	***	0.055		0.020	
	(0.099)		(0.104)		(0.126)		(0.111)		(0.071)		(0.059)	
RENT (logged)	-0.054		0.877	***	0.600	***	1.176	***	0.784	***	0.241	
	(0.202)		(0.181)		(0.223)		(0.214)		(0.226)		(0.161)	
Intercept	-13.422	**	2.594		-6.063		29.332	***	1.198		12.362	***
Adjusted R ²	0.443		0.497		0.358		0.466		0.370		0.546	

*** p<.01; ** p<.05; * p<.10

Table 3 demonstrates the significance of annual changes in choice availability by school district. Reflecting the non-linear patterns of choice availability by school year in individual school districts, the trend of choice availability using the growth curve model has the greatest goodness of fit for the cubic model (logLik=888.525, $p<0.0001$). Model 1 for choice availability indicates that the choice availability in a given school district starts at 0.787 with the gain in the second year at 0.194, but the annual choice availability decreases in the third year. Then the choice availability ratios slightly increase again per year, when unconditioned by the selected housing features in 117 school districts. Model 2 for choice availability suggests a statistically significant and positive impact of householders' race on choice availability. A one-percent increase in the proportion of White and African-American householders in school district leads to 0.2- and 0.1-point improvements in choice availability respectively.

Table 3. Growth curve analysis of choice availability

	Choice availability						Difference in choice availability					
	Model 1			Model 2			Model 1			Model 2		
Year	0.194	(0.018)	***	0.189	(0.018)	***	-0.070	(0.035)	**	-0.069	(0.029)	**
Quadratic year	-0.076	(0.006)	***	-0.077	(0.006)	***	0.025	(0.013)	*	0.026	(0.011)	**
Cubic year	0.006	(0.001)	***	0.006	(0.001)	***	-0.002	(0.001)		-0.002	(0.001)	*
OCCUPIED				0.727	(1.045)					-0.385	(0.210)	*
OWNER				-0.291	(0.499)					0.306	(0.115)	***
ONLYWHITE				1.947	(0.627)	***				0.476	(0.164)	***
ONLYBLCK				1.204	(0.644)	*				-0.129	(0.171)	
HSPN				-0.355	(0.468)					-0.842	(0.128)	***
LESSCROWDED				-3.137	(2.455)					0.007	(0.479)	
ROOMS				0.203	(0.114)	*				0.008	(0.028)	
BUILTYR				-0.002	(0.004)					-0.003	(0.001)	**
TELEPHONE				2.749	(1.677)					1.139	(0.390)	***
CAR				-1.699	(1.071)					0.222	(0.193)	
VALUE				0.169	(0.126)					0.000	(0.000)	*
RENT				0.291	(0.326)					0.000	(0.000)	***
Intercept	0.787	(0.072)	***	0.635	(9.097)		0.005	(0.054)		-0.047	(0.054)	

*** p<.01; ** p<.05; * p<.10

In addition to the finding that choice availability changes in accordance with the cubic year term by school district, the gap in choice availability between a given school district and its first closest districts provides the weak but still significant structural difference in the variances by school year and school district. Since differences in choice availability from adjacent school districts are less likely to be confounded with the change of school year, time change explains only a small part of the difference in choice availabilities between the school districts. Instead, more housing features with statistical significances account for the lack of public school options under NCLB. If a certain school district expresses larger differences in the proportion of owner-occupied housing units, the proportion of only White householders, and the proportion of housing units with telephone service compared to its neighboring school districts, the school district is likely to have fewer schools which are under NCLB sanctions. Moreover, the difference in median contract rent decreases the ratio of choice availability by 0.2 points per \$1,000. The disproportionate distribution of householders of Hispanic or Latino origin in Cook County also contributes the probability that students in the school districts with a large immigrant population will lack access to better performing schools through NCLB. This finding provides evidence for the claim that the implementation of the public

school choice provision under NCLB, essentially confining its choice markets to geographical district boundaries, intensifies disparities between school districts. Given the relationship between school district boundaries and residential patterns, simply offering a chance to transfer to another school within the student's own school district may only strengthen the polarization of educational opportunities between local education markets.

Discussion

The public school choice provision of the NCLB does not directly improve the failing schools, because the policy moves students away from low performing schools and threatens those schools financially (Hess & Finn, 2004). However, student transfers from low performing schools to high performing ones may function as a critical driving force for encouraging academically unacceptable schools to innovate and reform themselves. Assuming that market incentives through competition not only improve academic achievement but also realize equal educational opportunities, the public school choice provision allows students in troubled schools to have access to academically successful schools free of charge. Here, the measure of access to quality markets is essential to understanding the actual effects of market forces such as competition and choice. While a considerable number of studies have been conducted to investigate the impacts of school choice programs on equitable distribution of educational opportunities, the concern about market readiness for choice has been understudied. Simply granting choice can hardly promote dramatic changes in education without the support of additional mechanisms which generate quality alternatives (Lubienski, 2005); thus, a lack of available school options within permitted school district boundaries could discourage families eligible for school choice under the federal and state initiatives. Furthermore, a deficiency of comparable competitors within the markets might offer insufficient incentive for service providers, specifically repeatedly low-performing public schools in this study, to generate substantial innovation and diversity in current public school systems. Research on choice availability under the public school choice provision of NCLB, which offers students alternatives to repeatedly underperforming schools but restricts these choices to their school districts, can help identify the degree to which local education markets in highly segregated metropolitan areas are ready to serve the purpose of providing equal educational opportunities.

Through focusing on Cook County, Illinois, this study finds that the public school choice provision under the NCLB builds unequal choice settings between school districts. Given that all the school districts in Cook County have different extents of choice availability, the householders' race in school districts accounts for the probability that students will transfer to better learning environments. The growth curve models presented minor, and therefore negligible, effects of time change on choice availability, similar to the recent study which found that persistently underperforming schools do not experience significant turnarounds for the notable impact of student characteristics on achievement (Stuit, 2012). This study also indicates that school districts with lower choice availability are physically adjacent to ones with better availability; differences in choice availability between a given school dis-

trict and its neighboring ones are largely explained by the housing features in the school districts. Therefore, students who are eligible for the public school choice provision but whose school districts have fewer available school options are unlikely to escape from repeatedly low-performing schools. Even though there are several better-performing schools in geographically neighboring school districts, students in certain areas tend to be placed in a catch-22 situation, i.e., the lower choice availability and the more underprivileged learning environments attributed to residential segregation. The connection between the gap in choice availability and the discrepancy in housing characteristics by school district indicates that the utilization of public school choice is determined by where students live and which school district they belong to, regardless of their eligibility.

A large volume of studies have provided sufficient evidence that school district boundaries are consistent with the distribution of living zones clustered by race and ethnicity, income level, and other attributes, not by the preference of different revenue and expenditure patterns in local settings (Bayer & McMillan, 2012; Lipman, 2002; Vergari, 2002). These boundaries have legal power to exclude surrounding communities with either disadvantaged or advantaged members by limiting enrolment across districts, as in the Court's decision on *San Antonio Independent School District v. Rodriguez* (1973) and *Milliken v. Bradley* (1974) that justified local control over schools. Given that the ability to pay for housing prices and property taxes hinders parents from shopping for schools and entering into new communities that satisfy their needs and preferences (Billings, Brunner, & Ross, 2014; E.K. Wilson, 2011), this study finds that the effective use of the public school choice provision is mostly trapped within the boundaries of a school district, and either explicitly or implicitly involves a question of affordability for moving into a new community. Since the public school choice provision, which is strongly controlled by local contexts, has a potential to polarize the exercise of choice availability among uneven school districts, the rising issue surrounding choice is not to whom the choice is offered, but rather under what conditions choice is practically exercised. As noted earlier, the public school choice provision fundamentally compels school districts to offer choice only within their zone boundaries, and school districts prefer keeping their boundaries closed and tend to eschew co-operative transfer agreements. The local educational market hierarchies thus offer differentiated quality and quantity of public school choice to students (Lubienski, 2005), such that students who enroll in chronically low-performing schools in predominantly segregated school districts can encounter double isolation. Consequently, this study suggests that the public school choice provision under NCLB relies on a market mechanism with only limited effectiveness in providing meaningful school options to students in fragmented communities, in that it often fails to allow parents the opportunity to emancipate their children from homogeneous learning environments.

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