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Student Stratification among a Combination of School Choice Policies in Detroit

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ABSTRACT

A large body of research on school choice has examined whether choice-based policies reproduce and exacerbate existing racial and socioeconomic inequalities. While many states have enacted multiple school choice policies at once, most of these studies focus on a single choice-based policy. This study examines enrollment patterns in Detroit in the context of a combination of school choice policies: charter schools, intra-district choice, and inter-district open enrollment. It assesses the extent to which Detroit students are stratified by race, socioeconomic status, and special education status, and describes how different socio-spatial push and pull factors may be associated with different options for school choice. Even among Detroit's racially and socioeconomically homogeneous student population, the results show some evidence of a stratified educational landscape, and suggest the need for more research on how a combination of choice mechanisms may be taken up differently by different students and families.

KEYWORDS

Stratification; urban education; school choice; socio-spatial analysis

School choice policies, which enable students to opt out of their residentially-assigned schools and attend a different school, have been promoted as a way to both “liberate” students from academically underperforming schools (Archbald, 2004) and lead to school improvement through competitive market pressures (e.g. Chubb & Moe, 1990; Friedman, 1955; Hoxby, 2003). Over two decades of research on school choice, however, has found “mixed empirical evidence of these policies’ effectiveness, and strong evidence that they result in greater sorting, stratification, and segregation” (Scott & Holme, 2016, p. 284). While much of the research on school choice has focused on whether choice-based policies promote school improvement through autonomy, innovation, and accountability (Berends & Zottola, 2009), another substantial body of literature has focused on whether

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Author's Note

This research result used data structured and maintained by the MERI-Michigan Education Data Center (MEDC). MEDC data is modified for analysis purposes using rules governed by MEDC and are not identical to those data collected and maintained by the Michigan Department of Education (MDE) and/or Michigan's Center for Educational Performance and Information (CEPI). Results, information and opinions solely represent the analysis, information and opinions of the author(s) and are not endorsed by, or reflect the views or positions of, grantors, MDE and CEPI or any employee thereof.

school choice policies reproduce or exacerbate existing racial and socioeconomic inequalities (Berends, 2015).

Most studies of school choice focus on a single policy, such as charter schools or inter-district open enrollment. As Jabbar and Lenhoff (2019) write, “we need more research on how specific policies influence equity and access in school choice” and “an examination of the variations in market contexts” (p. 359). This includes paying attention to how different choice policies produce different effects in combination with each other. Indeed, while many states have enacted multiple school choice policies at once, few studies have considered the relationship between school choice and stratification in a particular social and geographic context with a particular combination of choice-based policies.

This study examines student stratification among a combination of different choice-based policies in the metropolitan Detroit area. Detroit’s educational landscape has been highly marketized by a combination of charter schools, intra-district choice, and inter-district open enrollment. Using location-based school assignment data from the Detroit Public Schools Community District (DPSCD), state administrative data, and a nuanced school typology that reflects different choice policies, this study describes the enrollment patterns of all Detroit resident students attending traditional public and charter schools in the metropolitan Detroit area in 2017–18 ($n = 96,963$) to assess whether and how school choice policies are associated with racial, socioeconomic, and special education stratification.

Literature review

School choice and stratification

Early critics of school choice warned that school choice policies might increase stratification and exacerbate educational inequities (e.g. Frankenberg & Lee, 2003; Lee, Croniger, & Smith, 1994). Following these concerns and calls for better research on the relationship between school choice and stratification (Archbald, 2000), researchers have produced a large literature that explores the extent to which school choice policies increase stratification between racial and socioeconomic groups. Though some studies have found that choice programs can reduce racial isolation (e.g. Egalite, Mills, & Wolf, 2017), this body of research has largely supported the claim that school choice increases racial segregation. For example, Monarrez, Kisida, and Chingos (2019) recently provided the first causal analysis of the segregative effects of charters by comparing actual enrollment to a counterfactual enrollment pattern. They find that the effect is modest, and that “segregation would fall 5 percent if charter schools were eliminated from the average district in our sample,” but also note that “the segregative effect of charter schools is greater in urban

districts with high shares of black and Hispanic students and in suburban districts with low black and Hispanic representation” (p. v).

The racially segregative effects of school choice are not confined to charter schools. Intra-district choice policies, which allow students to enroll in any school within their residential school district, have enabled families to opt out of their assigned schools when they live in more racially and socioeconomically diverse areas or when there is a greater number of poor or nonwhite students at their assigned schools (Phillips, Larsen, & Hausman, 2015). Inter-district choice policies, which allow students to enroll in schools outside their residential school district, can similarly produce greater racial stratification (Pogodzinski, Lenhoff, & Addonizio, 2018). Researchers also find that choice-based policies increase stratification by income and socioeconomic status (Archbald, Hurwitz, & Hurwitz, 2018; Dougherty, Harrelson, Maloney, Murphy, & Smith, 2009; Ni, 2012; Owens, Reardon, & Jencks, 2016; Phillips et al., 2015), which are closely related to race in the United States (Lin & Harris, 2009).

A diverse body of research offers a variety of explanations for how school choice increases stratification. Many researchers have focused on aspects of individual choice-making – such as the propensity for self-segregation (Bifulco, Ladd, & Ross, 2009a; Billingham & Hunt, 2016; Garcia, 2008; MacLeod & Urquiola, 2018), the effect of particular schooling experiences (Goldring & Philips, 2008), differentiated interests in school programs (Berends, 2015; Drake, 2000; Jabbar, 2015b; Lubienski & Lee, 2016), negative perceptions of neighborhood schools (McWilliams, 2017), or concerns over school safety (Hamlin, 2017), as well as differing experience navigating the school choice landscape and an orientation toward choice (Hamlin, 2018).

Studies that focus on individual choice-making often draw upon rational choice theory. In contrast, Cooper (2005) offers a theory of “positioned choice,” which “conceptualizes a highly subjective parental school choice process that is inextricably linked to choice makers’ race, class, and gender backgrounds” (p. 175). Likewise, Jabbar’s (2011) application of behavioral economics embraces a “bounded rationality” that better frames findings about school choice, individual decision-making, and stratification. Indeed, school choices are constrained by students’ and families’ perceptions of whether a school is accessible to them (Altenhofen, Berends, & White, 2016; Bell, 2009a, 2009b; Bifulco & Ladd, 2007; Cucchiara & Horvat, 2014; Diamond & Gomez, 2004; Harris & Larsen, 2015; Kleitz, Weiher, Tedin, & Matland, 2000; Schneider, Marschall, Teske, & Roch, 1998). These positioned and bounded choice frameworks legitimate an emphasis on student and parent agency in navigating school choice by decoupling it from problematic assumptions embedded in rational choice theory and the ideological and political implications that flow from it (Archer & Tritter, 2000).

In addition to individual decision-making, scholars have highlighted the structural, institutional, and social drivers of stratification. In some instances,

families with greater social capital exploit school choice policies in order to hoard opportunities for their children (Brown & Makris, 2018; Holme & Richards, 2009; Lee et al., 1994; Ni, 2012; Pearman & Swain, 2017; Phillips et al., 2015; Sattin-Bajaj & Roda, 2018). In others, policy incentives lead schools to reproduce exclusionary dynamics rather than pursue a diverse or high-need student body (Bergman & McFarlin, 2018; Buckley & Schneider, 2005; Jabbar, 2015b; Kasman & Loeb, 2013; Lacireno-Paquet, Holyoke, Moser, & Henig, 2002; Lubienski, 2005; Robertson & Dale, 2013; Stambach & Becker, 2006; Stern, Clonan, Jaffee, & Lee, 2015). Seemingly innocuous policies, such as registration deadlines (Fong & Faude, 2018; Lenhoff, *in press*), can also create exclusions. Disparate access to information, differing social networks, and differentiated marketing may also influence stratification (Hamlin, 2018; Harris & Larsen, 2015; Jabbar, 2015a; Lubienski, 2007). School choices are also a function of school geography (Bell, 2007, 2009b; Hastings, Kane, & Staiger, 2005; Yoon & Lubienski, 2017), so residential patterns (Dougherty, Zannoni, Block, & Spirou, 2014) or disparate access to transportation (Hamlin, 2018; Scott & Marshall, 2019) can further stratify students. Together, this literature paints a complex picture in which a combination of individual choice-making, family resources, social capital, institutional norms, policy structures and incentives, and organizational behavior perpetuate stratification in the context of school choice.

Most studies of school choice and stratification have focused on one school choice policy alone. Few have considered a city, region, or state's full policy landscape to demonstrate how a combination of choice-based policies can increase educational stratification. Even when research recognizes that multiple different choice policies play a role in stratification, those different policies are typically lumped together as a 'choice' alternative. For example, Bifulco, Ladd, and Ross (2009b) find that expanding school choice in North Carolina "may have significant adverse effects on the peer environments of a particularly vulnerable group of students" (p. 130). Importantly, while they discuss the multiple choice options that students have in Durham, they ultimately model a binary outcome (attending or not attending one's assigned school) and thus do not examine differences that may emerge as a result of different choice options.

A few studies have focused on how multiple school choice options can create an educational landscape that exacerbates student stratification. One example is Adamson, Cook-Harvey, and Darling-Hammond's (2015) research on New Orleans, where state-imposed market-based reforms transformed the city's educational system after Hurricane Katrina (Buras, 2015). In a review of New Orleans' market-based reforms, Adamson et al. (2015) identify three tiers of schools and found that a large majority of white and Asian students attended the best-rated and highest-achieving Tier 1 schools, whereas the majority of black students, Latinx students, and students eligible

for free or reduced-price lunch attended Tier 2 and Tier 3 schools. Tier 2 and 3 schools also had higher rates of students with special education needs than Tier 1 schools. Adamson et al. (2015) conclude that “New Orleans reforms have created a set of schools that are highly stratified by race, class, and educational advantage, operating in a hierarchy that provides very different types of schools to different ‘types’ of children” (p. 47).

Two other examples focus particularly on choice, demographic change, and the end of enforced desegregation orders. Archbald et al. (2018) study five districts in Delaware – which together comprised “one of the most successfully desegregated metropolitan regions in the nation” (p. 11) – and describe the changes in policy and enrollment patterns after a court-ordered desegregation mandate was lifted in 1995. They find that while residential segregation has not changed much, a complex interaction between charter schools, open enrollment policies, and neighborhood attendance zoning has resulted in increased racial segregation in schools. Similarly, Clotfelter, Hemelt, Ladd, and Turaeva (2019) study segregation in North Carolina from 1998 to 2016 – after an increase in immigration, a decline in federal oversight of segregation, and the growth of school choice mechanisms like charters schools. Using the Coleman index to examine racial and economic segregation, they find overall a sharp increase in segregation between white and Latinx students and note that different mechanisms (e.g. within-district segregation, charter schools, private schools, and splitting counties into multiple districts) drive segregation in different parts of the state.

Together, the findings of these studies suggest the need for more attention to how multiple policies in tandem – and not just individual choice policies – might produce stratification across a district or region. In addition, while the studies focus on how segregation exists in a particular policy landscape, their work can be expanded upon by drawing upon sociological theory to consider the stratifying mechanisms of these overlapping policies.

School choice in detroit

Detroit serves as a unique context to study how a combination of school choice policies may produce stratification. Educational marketization in Michigan was facilitated by Proposition A (Prop A), which overhauled the state’s school funding scheme. Prop A shifted the primary source of funding from property taxes to state sales tax – creating state control over school finances, a minimum per-pupil allowance for students, and a “dollars-follow-students” formula wherein districts received per-pupil funding allowances based on where students enrolled in school rather than where they lived (Kang, 2015). This dollars-follow-students reform created the financial policy infrastructure necessary to enact a series of choice-based policies in the state.

The first was the establishment of charter schools. About the same time as Prop A, Michigan passed Public Act 362 – “one of the most expansive charter laws in the nation” (Kang, 2015, p. 82). The law allowed charter schools to be authorized by school boards, intermediate school district (ISD) boards, and community college and state university boards. While it had an initial cap on the number of charters that was reached by 1999, the cap was eventually increased to allow more charters to open in Detroit and finally completely lifted in 2011 (Goenner, 2011). This combination of broad authorization allowance and uncapped charter expansion has created a highly fractured governance landscape with a large number of different authorizers (482 Forward, n.d.). Detroit now has one of the highest percentages of charter school enrollment among major cities, behind only Washington, D.C., and New Orleans (Helsa, White, & Gernstenfeld, 2019).

Shortly after Prop A and its first charter school law, Michigan established inter-district open enrollment. In the 1996 State School Aid Act, sections 105 and 105c established “schools of choice” and gave local school boards discretion over whether to accept nonresident students. While students could initially only enroll in districts other than their own that were within the same ISD, inter-district open enrollment was eventually expanded to include any contiguous local district outside of a students’ ISD, and then any ISD contiguous to a student’s residential ISD. As Pogodzinski et al. (2018) note, “many Michigan school districts saw an opportunity to increase their operating revenue. By the programme’s second year, 45% of districts were accepting non-residents and, by the fifth year, fully 80% of Michigan’s districts had signed on” (p. 625). Importantly, because Section 105 and 105c allowed for a high degree of local discretion, limitations based on where students live, how many students can enroll, and in what time frame they can enroll in a nonresident district vary widely (Lenhoff, 2018). In fact, the law allows districts to refuse to participate in inter-district enrollment altogether. Districts can also decide whether or not to provide transportation for non-resident students (Cowen & Creed, 2017). Based on these limitations, Lenhoff (2018) has categorized districts in the metro Detroit area as open (e.g. few or no restrictions), controlled, restrictive, exclusionary, or closed (i.e. not participating in inter-district open enrollment).

In addition to these two policies, districts in Michigan may offer intra-district open enrollment (Wixom, 2019). Through the same State School Aid Act that established inter-district choice, Michigan allows school districts to “provide[] a parent with the ability to enroll a student in a building other than the preselected building within the school district” (Michigan Department of Education, 2013, p. 1). School districts can choose whether to allow intra-district open enrollment, and whether or not to provide transportation to students who enroll in a school within their district that is not their assigned-school. Currently, the Detroit Public Schools Community District

allows choice within the district but does not provide transportation to students opting out of their assigned school. Magnet schools, where students can gain acceptance through an application or entrance exam, also create more within-district choice for students (Polikoff & Hardaway, 2017).

A collection of research that has studied Michigan's choice-based policies individually offers empirical evidence that school choice in the metro Detroit area has had stratifying effects. Given the segregative legacy of *Milliken v. Bradley* (1974, 1977) in Detroit (see Baugh, 2011), inter-district enrollment ostensibly provides a policy mechanism for racial desegregation. Yet, Pogodzinski et al. (2018) found that in suburban districts receiving a large number of black and poor students from Detroit, students who reside in those districts increasingly use open enrollment to leave their residential districts and attend schools that are even farther from Detroit. Further, Lenhoff (in press) found that districts with more restrictive nonresident enrollment rules are often located closest to districts with substantially higher black populations, and that these restrictions are associated with lower odds of nonresident black student enrollment.

For charter schools, Edwards and Cowen (2019) show that charter schools in Michigan disproportionately serve black and economically disadvantaged students. Ni (2012) found that student sorting between charters and traditional public schools in Michigan's urban districts can create a higher concentration of economically disadvantaged students. Likewise, Hamlin (2018) finds that among Detroit students, families enrolling their students in charter schools "had relatively stabler home environments than nonchooser" (p. 69), as well as stronger social and professional networks and better access to transportation. These findings likely also apply to families who seek out and enroll in magnet schools (see also Hamlin, 2017).

Purpose & research questions

Part of the challenge in studying school choice and stratification in highly marketized and racially segregated cities like Detroit is the relative racial and socioeconomic homogeneity of the student population. In his qualitative study comparing Detroit families whose students are enrolled in traditional public schools to those whose students are enrolled in charter or magnet schools, Hamlin (2018) concludes that "within-group differences may confer a self-selection advantage to schools of choice in challenging settings," and notes that "broad controls for income or race may not adequately capture this within-group variation" (p. 70). Indeed, in 2017–18, Detroit's student population was over 80% black and over 90% economically disadvantaged.¹ Segregation and stratification between Detroit and its suburbs are much more drastic than within the city: excluding Detroit, over 65% of the students in the metro Detroit area in 2017–18 were white, and under 47% were

economically disadvantaged. Hamlin's (2018) findings, however, are a reminder that even within a highly segregated and high-poverty student population, families with meaningful but hard-to-observe differences may further stratify as they engage in school choice.

Yet another challenge is the way in which school choice policies lead to overly general school typologies. Public discourse (e.g. Levin, 2018) and academic research (e.g. Lenhoff, Pogodzinski, Singer, & Cook, 2019a) on Detroit education often use a public-charter dichotomy, rather than distinguishing between different kinds of traditional public and charter schools. Yet, as Hamlin (2017) finds, distinguishing between "neighborhood" and "commuter" charter schools reveals some important within-sector differences. In addition, studies of inter-district open enrollment focus on traditional public school districts that receive Detroit students (e.g. Pogodzinski et al., 2018), whereas more Detroit students who attend school outside the physical boundaries of the city are actually enrolled in charters (Lenhoff et al., 2019a).

The research presented here overcomes these limitations by applying a comprehensive typology of schools enrolling Detroit students. In doing so, the study looks at how a combination of school choice policies are associated with enrollment patterns of Detroit students. Specific research questions include:

- To what degree are Detroit students stratified by the type of school they attend, based on race, socioeconomic status, and special education status?
- What student, school, and geographic factors are associated with a Detroit student's enrollment in different school choice types, compared to their DPSCD-assigned school?

In answering these questions, this study suggests the need for more research on how combinations of school choice policies shape enrollment dynamics across an educational landscape, with implications for understanding the relationship between school choice and stratification in particular contexts.

Theoretical framework

School choice dynamics are shaped by a combination of individual decision-making and social, economic, policy-based, and geographic structures that constrain those decisions (Cooper, 2005; Bowe, Gewirtz, & Ball, 1994; Jabbar, 2011; Jabbar & Lenhoff, 2019). This study approaches school choice through Yoon and Lubienski's (2017) socio-spatial perspective. The authors connect critical geography (e.g. Soja, 1996) with the sociological work of Bourdieu (1989; Bourdieu & Wacquant, 1992) to offer "a more layered theoretical framework for analyzing how social groups who reside in different neighborhoods with particular historic and social place meanings may reproduce urban geography, as well as how these

patterns may shape school choice” (p. 6). This approach is useful because it accommodates both the agency of parents and students who make positioned or bounded choices, and the role of social, economic, policy-based, and geographic structures that shape those choices.

A socio-spatial theoretical framework is also useful because school assignment is geographic in nature. Where students live determines the school to which they are assigned (Weinberg, 1967), and thus the choice to opt out of an assigned school is in part a decision based on a spatial relationship. Further, recent evidence from Detroit affirms that location shapes where students choose to attend school (Lenhoff, Singer, Pogodzinski, & Cook, 2019b), and that distance and geography create material barriers that affect school choices (Bell, 2009b; Hamlin, 2018). At the same time, boundaries – such as those around districts or attendance zones – are social constructs (Yoon & Lubienski, 2018). People make decisions about where school attendance boundaries start and end. As a result, students may be assigned to one school that is actually farther away from them than another (Monarrez, 2018) or to a school that may not appear welcoming to them (Yoon, Lubienski, & Lee, 2018). School attendance boundaries also may not align with the socio-spatial boundaries of students’ and parents’ community. Thus, the social dimensions of space and place, and not just the physical ones, must be incorporated in an analysis of school choice (Yoon & Lubienski, 2017).

Figure 1 outlines how this socio-spatial framework is applied to the present study of school choice and stratification in Detroit. Families who make school choices in urban districts are pushed from schools they perceive negatively and pulled toward schools they perceive positively (Ellison & Aloe,

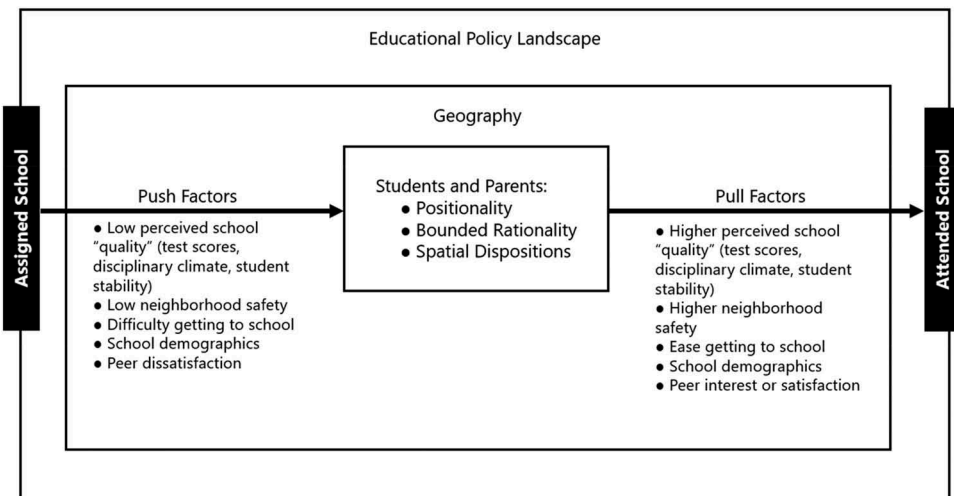


Figure 1. Socio-spatial framework for school choice and stratification in Detroit.

2018; Lenhoff et al., 2019b). Their views of quality and available school choices are shaped by how they “construct, experience and struggle over meanings in local contexts” (Ferrare & Apple, 2015, p. 45). This positioned (Cooper, 2005) and bounded (Jabbar, 2011) choice-making, along with families’ material constraints and spatial dispositions, are situated within their specific geography – both their physical location and the school assigned to them because of their location.

Data and methodology

Student- and school-level data for this study come from the Michigan Student Database System, provided by Michigan’s Center for Educational Performance and Information (CEPI). These administrative data include demographic and academic data for each student and a geocode for students’ residential block, for all students who lived in Detroit and attended a traditional public or charter school in the metropolitan Detroit area in the 2017–18 school year. For students in a state-wide testing year (grades 3–8 and grade 11), the data also include math and English/Language Arts test scores standardized as state-wide z-scores.

Geographic data comes from a variety of sources. School addresses, also available through CEPI, were geocoded and matched with students. Geographic data on attendance zones come from shapefiles provided by DPSCD. These data were matched to students using their residential geocodes and used to create variables related to a student’s assigned school. Using the geographic information systems program QGIS, a variety of additional geographic variables were produced. Data on crime rates for Detroit census tracts comes from the Detroit Police Department. Finally, data on school discipline were retrieved from the Civil Rights Data Collection public use files.

The population for this study includes all students attending a traditional public or charter school in the metro Detroit area in 2017–18. The study’s analytic sample includes all students from this population with no missing values on key variables. Further, students were excluded if they were enrolled in an alternative school or school for exceptional students, a juvenile detention center, or a virtual school. Overall, the analytic sample includes 95.65% of the student population.

Table 1 summarizes the key variables for this analytic sample. Student-level variables include a student’s gender, race, status as an “economically disadvantaged” student, status as an English language learner, status as a recipient of special education services, and whether the student is in lower elementary (K-2), upper elementary (3–5), middle school (6–8), or high school (9–12). Student-level geographic variables include the distance from a students’ residential block to their assigned DPSCD school (in miles), and the concentration of schools within a students’ “neighborhood radius” – within 2.5 miles (K-8) or

Table 1. Summary of key variables for analytic sample.

Variable	N	Mean	Std. Dev.	Min.	Max.
<i>Student-level Characteristics</i>					
Female	96,963	0.4951	-	0	1
Special Education	96,963	0.1314	-	0	1
English Language Learner	96,963	0.1146	-	0	1
Black	96,963	0.8295	-	0	1
Latinx	96,963	0.1025	-	0	1
White or MENA	96,963	0.0451	-	0	1
Asian	96,963	0.0136	-	0	1
Other race	96,963	0.0093	-	0	1
Economically Disadvantaged	96,963	0.9029	-	0	1
Lower Elementary (K-2)	96,963	0.2515	-	0	1
Upper Elementary (3-5)	96,963	0.2432	-	0	1
Middle School (6-8)	96,963	0.2271	-	0	1
High School (9-12)	96,963	0.2782	-	0	1
<i>Student-Level Geographic Factors</i>					
Distance to School Attended (mi)	96,963	2.7857	2.8904	0.0004	31.2903
Distance to Assigned School (mi)	96,963	1.0245	0.8067	0.0004	5.6500
School concentration in "neighborhood radius"	96,963	9.5472	3.5618	0	24
<i>Attended School Characteristics</i>					
School Discipline Rate	569	17.1824	16.9181	0.0000	114.5780
School Stability Rate	569	0.8585	0.1045	0.0000	1.0000
% Students Black at Attended School	569	0.5039	0.3861	0.0034	1.0000
<i>Assigned School Characteristics</i>					
School Discipline Rate	123	20.9037	9.3808	3.5008	69.3457
School Stability Rate	123	0.8227	0.0424	0.6937	0.9407
% Students Black at Assigned School	123	0.8636	0.2860	0.0289	1.0000
School Average Math Z-Score	123	-1.0213	0.1908	-1.4380	-0.2230
% Students from School Attendance Boundary Enrolled in Assigned School	123	0.2314	0.0821	0.0730	0.5811
<i>Assigned School-Related Socio-Spatial Factors</i>					
Crimes per 100 residents in School Census Tract	123	13.0236	4.8961	4.6395	31.6071
Ratio: Students in Boundary-to-Schools Attended	123	10.0714	6.7174	2.1429	40.6200

3.5 miles (9-12) of where they live (see Hamlin, 2017; Schlossberg, Greene, Phillips, Johnson, & Parker, 2006). The school concentration variable is constructed at the student-level instead of the school- or geographic-level because students who live in different parts of that geographic area – especially in the large high school attendance boundaries – may have very different school concentrations.

Assigned-school level variables at the school and geographic levels represent push factors that may influence school choices. One set of variables serve as proxies for parent perceptions of school quality. The discipline rate is the number of disciplinary actions at the assigned school per 100 students; and

the stability rate is the percentage of students who remain at the school from the previous year (excluding students who naturally transition out based on their grade level). These variables may indicate a more or less positive school culture and climate. School-wide average scores on the state standardized mathematics test are included to reflect parents' possible perceptions of academic quality.

Another set of variables reflect additional push or pull variables. Because families may make choices based on the racial composition of schools (Schneider & Buckley, 2002), the percentage of students who are black in one's assigned school and attended school are included. The number of crimes committed per 100 people in 2017–18 at the tract level is also included, to stand in for parents' possible perceptions of safety at their assigned school or in the assigned school's neighborhood.

Finally, two variables reflect aspects of peer influence. The percentage of students from a student's attendance boundaries who are enrolled in their assigned school may reflect a peer influence to attend their specific assigned school or not. Likewise, the ratio of students in the attendance boundaries to schools attended by students in those boundaries is included. A lower ratio means that students are spread over a greater number of schools, which may signal a greater propensity among students in that area to choose amongst a greater number of school options. That greater propensity to choose may in turn influence a student or parent to more readily look for or have knowledge of other options beyond their assigned school.

School typology

The school typology for this study was constructed through a combination of public data. First, Michigan's Educational Entity Master file provides an indicator for whether a school is a charter or traditional public school, as well as its physical address. These indicators were matched to students by their school code in order to identify if students attended a traditional public or charter school and whether they attended school in Detroit or outside of Detroit. Then, school attendance boundaries provided by DPSCD were matched to residential blocks in Detroit using QGIS. Doing so produced a link between every block in Detroit and its residentially-assigned DPSCD school for elementary, middle, and high school students, which was used to match students to their DPSCD-assigned school. Public data from the DPSCD School Data Application Program Interface also provided an indicator of whether a school was a magnet school (defined by whether they required an application or an examination for entrance). These indicators enabled a distinction between different types of DPSCD schools, as well as between traditional public and charter schools, and between schools within and outside of Detroit.

Seven different school types were identified for this study (Table 2). Among DPSCD schools, students were identified as attending one of three school types: their assigned DPSCD school, another DPSCD school that was not assigned to them, or one of DPSCD's magnet schools. Based on Hamlin's (2017) finding that charter schools and the characteristics of their student populations in Detroit may be distinguishable based on the average commute distances of their students, this study uses a typology of "commuter" and "neighborhood" charter schools. Commuter charters have students who travel greater than 2.5 miles (K-8) or 3.5 miles (high school) on average, whereas "neighborhood" schools have students who travel less than 2.5 miles or 3.5 miles on average. Finally, schools outside of Detroit are distinguished between charter schools and traditional public schools. This distinction is important because charters outside of Detroit and traditional public schools outside of Detroit represent two distinct policy avenues for school choice.

Method of analysis

The analysis began by summarizing the distribution of students across different school types, to assess the extent to which students in Detroit are stratified by race, economic disadvantage, and special education status. Then, a multinomial logistic regression was estimated to describe how a combination of "push" and "pull" factors are associated with students enrolling in each school type, instead of the school assigned to them by DPSCD, while controlling for other demographic and geographic variables. The model (Figure 2) was estimated based on the following equation:

$$\ln\{P[\textit{Attended School} = \textit{School Type}] / 1 - P[\textit{Attended School} = \textit{School Type}]\} = \beta_0 + \beta_1(\textit{Student Characteristics}) + \beta_2(\textit{Student} - \textit{Level Geographic Factors}) + \beta_3(\textit{Attended School Characteristic}) + \beta_4(\textit{Assigned School Characteristic}) + \beta_5(\textit{Assigned School Socio} - \textit{Spatial Factors}) + e$$

Standard errors were clustered by students' residentially-assigned DPSCD schools for each school-level (K-5, 6-8, 9-12). Results from the multinomial logistic regression are presented as relative risk ratios (RRR). For each school type, the RRR coefficients show the relative odds associated with each variable that a student will attend that specific school type compared to their assigned DPSCD school.

Results

Detroit students are spread widely across the different school types (Table 2). In 2017-18, 21.54% of students in Detroit attended their assigned DPSCD

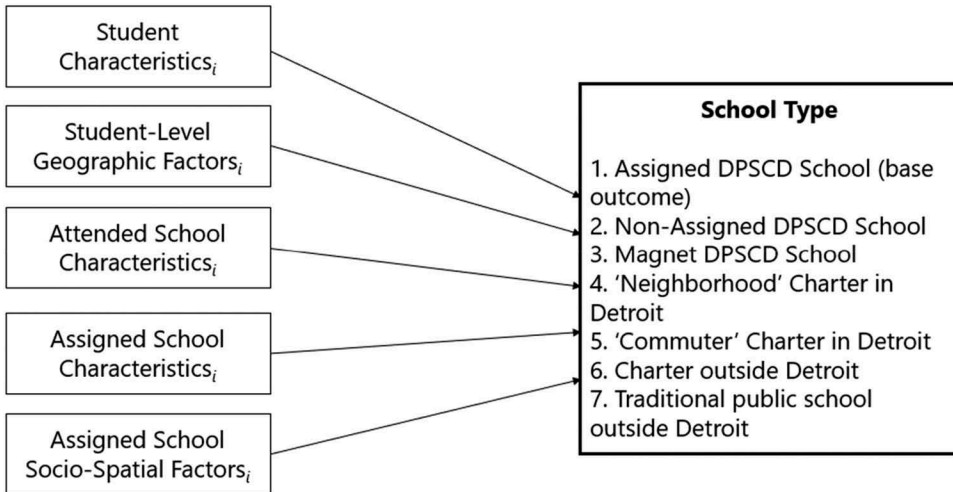


Figure 2. Conceptual model for multinomial logistic regression.

Table 2. Detroit school typology.

School Type	Definition	N (%) Students
Assigned DPSCD School	School assigned to all Detroit students based on DPSCD school attendance boundaries	20,881 (21.54)
Non-Assigned DPSCD School	Another DPSCD school that is not a study's attendance boundary-assigned school.	17,091 (17.63)
Magnet DPSCD School	A DPSCD school that requires an application or entrance examination for enrollment.	7,301 (7.53)
"Neighborhood" Charter School in Detroit	A charter school at which students' average distance from school is less than 2.5 miles (elementary) or 3.5 miles (high school) (Hamlin, 2017).	17,240 (17.78)
"Commuter" Charter School in Detroit	A charter school at which students' average distance from school is greater than or equal to 2.5 miles (elementary) or 3.5 miles (high school) (Hamlin, 2017).	12,973 (13.38)
Charter School Outside Detroit	A charter school whose physical location is outside of the Detroit City School District boundaries.	12,820 (13.22)
Traditional Public School Outside Detroit	A public school in a Michigan school district other than DPSCD.	8,657 (8.93)

school, while another 17.63% attended a DPSCD school that was not assigned to them, and 7.53% attended a DPSCD magnet school. While nearly one-third of Detroit students attended a charter school in the city, that number can be divided into 17.78% at "neighborhood" charters in Detroit and 13.38% at "commuter" charters in Detroit. Further, while nearly one-fourth of Detroit students exited the city for school in 2017–18, 13.22% attended a charter school located outside the city, whereas 8.93% attended a traditional public school through inter-district open enrollment.

Stratification across school choice options

The summary of student-level variables by school type shows some evidence of stratification across different school choice options in Detroit (Table 3). Racially, the city's school population is predominantly black. Still, black students are appreciably underrepresented in some school types and overrepresented in others. Likewise, students from other racial groups are not proportionally spread across the school types. A particularly lower percentage of students at neighborhood charters are black, and the difference appears especially to come from a higher number of white or middle eastern/north African (MENA) students. Likewise, a lower than average percentage of students at DPSCD magnet schools are black, driven largely by a higher number of Latinx students. Conversely, an especially high percentage of students at commuter charters – nearly 95% – are black.

Relatedly, students with English Language Learner (ELL) status appear to be stratified by school types. Race and ELL status are highly correlated: just over 0.2% of black students in the sample have ELL status, whereas around 74% of Asian students, 76% Latinx students and 54% of white or MENA students have ELL status. As such, school types with more Asian, Latinx, and white or MENA students tend to have more ELL students as well. Neighborhood charters and DPSCD magnet schools, with a lower percentage of students that are black than the other school types, also have higher rates of ELL students. Likewise, commuter charters have by far the lowest percentage of ELL students and the highest percentage of black students. Traditional public schools outside Detroit appear to have fewer ELL students than would be expected based on the percentage of non-black Detroit students who enroll in them. Indeed, non-assigned DPSCD schools have around the same percentage of non-black students but twice as many ELL students. This difference may be related to the differences in the percentage of Latinx versus white or MENA students at the two school types, or it may signal that ELL status is associated with a lower uptake of inter-district open enrollment.

Detroit students also appear to be somewhat stratified socioeconomically. As a binary variable, the “economically disadvantaged” indicator is a flawed and limited measure of socioeconomic status (Chingos, 2018; Harwell & LeBeau, 2010; Michelsmore & Dynarski, 2017) – especially in a city in which over 90% of students are identified as economically disadvantaged. Still, when disaggregating students by their school type, some differences emerge. DPSCD magnet schools have notably less economically disadvantaged students than the other schools types, and a slightly lower percentage of students attending traditional public schools outside Detroit are economically disadvantaged than the other school types. In addition, neighborhood charters have the highest percentage of economically disadvantaged students. These patterns help emphasize the usefulness

Table 3. Comparison of detroit student characteristics, by school type.

	All Students in Sample	Assigned DPSCD	Non-Assigned DPSCD	Magnet DPSCD	Neighborhood Charter	Commuter Charter	Charter Outside	Traditional Public Outside
<i>N students</i>	96,963	20,881	17,091	7,301	17,240	12,973	12,820	8,657
Female	0.4951	0.4810	0.4669	0.5881	0.4897	0.5004	0.5048	0.4942
Special Education	0.1314	0.1490	0.2062	0.0605	0.1198	0.1115	0.1124	0.0814
ELL	0.1146	0.1462	0.1030	0.1686	0.1590	0.0234	0.1266	0.0466
Black	0.8295	0.8057	0.8614	0.7728	0.7740	0.9448	0.8021	0.8506
Latinx	0.1025	0.1405	0.1118	0.1837	0.1389	0.0277	0.0456	0.0474
White or MENA	0.0451	0.0306	0.0199	0.0111	0.0695	0.0118	0.1111	0.0617
Asian	0.0136	0.0179	0.0028	0.0256	0.0128	0.0007	0.0274	0.0150
Other Race	0.0093	0.0053	0.0041	0.0068	0.0048	0.0150	0.0139	0.0253
Economically Disadvantaged	0.9029	0.9140	0.8928	0.7814	0.9615	0.8964	0.9179	0.8692

of disaggregating school types, revealing some modest differences between neighborhood and commuter charters and between traditional public and charter schools outside the city.

For students who receive special education services, significant disparities appear across schools. Non-assigned DPSCD schools have the highest percentage of students who receive special education services at over 20%,² followed by assigned DPSCD schools at about 15%. Charter schools within and outside the city have slightly lower rates. Both DPSCD magnet schools – many of which have entrance exams – and traditional public schools outside the city have drastically lower rates. These disparities may reflect the unique concerns of and barriers faced by families with students who receive special education services (Waitoller & Lubienski, 2019).

Finally, some stratification based on gender exists. Most different school types have around 50% of students identified as female and 50% identified as male. A substantially higher percentage (about 59%) of students at DPSCD magnet schools, however, are identified as female.

Pull, push, and stratification

Results from the multinomial logistic regression offer insight into how student, school, and geographic factors in Detroit's educational policy landscape are associated with somewhat stratified enrollment across different school choice options (Table 4). Even when controlling for other student characteristics and push and pull factors (as in the model), students receiving special education services have higher odds of enrolling in non-assigned DPSCD schools and lower odds of enrolling in all other types of schools, compared to assigned DPSCD schools. Figure 3 emphasizes this finding, comparing the probability that students with and without special education status will enroll in each school type when all other variables in the model are held constant at their mean values.

The results also highlight modest stratification by economic disadvantage. Economically disadvantaged students have a much greater probability of enrolling in neighborhood charters compared to their assigned schools; and their odds of enrolling in a commuter charter or a charter outside the city are not statistically significantly different compared to their assigned school. Yet, holding other variables constant, economically disadvantaged students have a lower probability than students who are not economically disadvantaged of enrolling in non-assigned DPSCD schools, DPSCD magnet schools, and traditional public schools outside the city compared to their assigned schools (Figure 4).

The model also includes indicators for grade levels, comparing the odds of upper elementary, middle, and high school students attending each school type instead of their assigned school to lower elementary students. These patterns differ between the different school types. For example, students are

Table 4. Multinomial logistic regression of push and pull factors associated with different school type choices.

	Model 1
<i>Assigned DPSCD School</i>	(base outcome)
<i>Non-Assigned DPSCD School</i>	
Female	0.9828
Special Education	1.4593***
ELL	0.7960*
Latinx	1.0862
Asian	0.2329***
White or MENA	0.5614*
Other Race	0.7049*
Economically Disadvantaged	0.7754***
Upper Elementary (3–5)	1.0195
Middle School (6–8)	0.7260**
High School (9–12)	0.8522
Distance to Assigned School ⁺	1.7728***
School Concentration ⁺	1.0578
Assigned School Discipline Rate [#]	1.0630
Assigned School Stability Rate [#]	0.9801
% Students Black at Assigned School [#]	1.3224
Assigned School Average Math Z-Score [#]	0.9058
% Students Enrolled in Assigned School [#]	0.6549***
Crimes per 100 residents in School Census Tract [#]	0.9313
Students in Boundary-to-Schools [#]	0.7469***
Attended School Discipline Rate	0.9269
Attended School Stability Rate	1.3060
% Students Black at Attended School	0.4881*
Intercept	3.0929**
<i>DPSCD Magnet</i>	
Female	1.4286***
Special Education	0.4925***
ELL	0.9726
Latinx	2.2903
Asian	0.8080
White or MENA	0.2125***
Other Race	1.5744
Economically Disadvantaged	0.5239***
Upper Elementary (3–5)	1.0556
Middle School (6–8)	1.8153*
High School (9–12)	4.5644***
Distance to Assigned School ⁺	2.1473***
School Concentration ⁺	1.0847**
Assigned School Discipline Rate [#]	1.2639
Assigned School Stability Rate [#]	0.7013
% Students Black at Assigned School [#]	0.9876

(Continued)

Table 4. (Continued).

	Model 1
	(base outcome)
<i>Assigned DPSCD School</i>	
Assigned School Average Math Z-Score [#]	1.0918
% Students Enrolled in Assigned School [#]	0.5190***
Crimes per 100 residents in School Census Tract [#]	0.9065
Students in Boundary-to-Schools [#]	0.8628*
Attended School Discipline Rate	0.2631***
Attended School Stability Rate	11.0005***
% Students Black at Attended School	1.1271
Intercept	0.1881**
<i>Neighborhood Charter</i>	
Female	1.0127
Special Education	0.7844**
ELL	0.8209
Latinx	1.2107
Asian	1.0337
White or MENA	1.6150*
Other Race	0.8875
Economically Disadvantaged	2.5174***
Upper Elementary (3–5)	1.1277*
Middle School (6–8)	0.7091*
High School (9–12)	0.0785***
Distance to Assigned School ⁺	2.0187***
School Concentration ⁺	1.1297***
Assigned School Discipline Rate [#]	1.1257
Assigned School Stability Rate [#]	0.4823***
% Students Black at Assigned School [#]	1.0502
Assigned School Average Math Z-Score [#]	1.1272
% Students Enrolled in Assigned School [#]	0.6254***
Crimes per 100 residents in School Census Tract [#]	1.0135
Students in Boundary-to-Schools [#]	1.0842
Attended School Discipline Rate	1.3119
Attended School Stability Rate	5.4378***
% Students Black at Attended School	0.7405
Intercept	0.8912
<i>Commuter Charter</i>	
Female	1.0356
Special Education	0.6695***
ELL	0.5808***
Latinx	1.2884
Asian	0.0813***
White or MENA	1.0108
Other Race	3.1108***
Economically Disadvantaged	0.8883
Upper Elementary (3–5)	1.3368***

(Continued)

Table 4. (Continued).

	Model 1
	(base outcome)
<i>Assigned DPSCD School</i>	
Middle School (6–8)	1.2671
High School (9–12)	1.0196
Distance to Assigned School ⁺	1.8686***
School Concentration ⁺	0.9672
Assigned School Discipline Rate [#]	0.9532
Assigned School Stability Rate [#]	0.9633
% Students Black at Assigned School [#]	1.2723
Assigned School Average Math Z-Score [#]	1.3359***
% Students Enrolled in Assigned School [#]	0.7341***
Crimes per 100 residents in School Census Tract [#]	1.0277
Students in Boundary-to-Schools [#]	0.8500
Attended School Discipline Rate	1.1519
Attended School Stability Rate	3.4258***
% Students Black at Attended School	2.2551**
Intercept	0.4768*
<i>Charter Outside</i>	
Female	1.0677*
Special Education	0.7267***
ELL	0.7637
Latinx	0.4612
Asian	1.8482
White or MENA	1.8530***
Other Race	2.0886***
Economically Disadvantaged	1.1450
Upper Elementary (3–5)	1.3402***
Middle School (6–8)	1.3030
High School (9–12)	0.3336**
Distance to Assigned School ⁺	1.6194***
School Concentration ⁺	0.9981
Assigned School Discipline Rate [#]	0.9830
Assigned School Stability Rate [#]	0.6018***
% Students Black at Assigned School [#]	2.4718**
Assigned School Average Math Z-Score [#]	0.9310
% Students Enrolled in Assigned School [#]	0.6660***
Crimes per 100 residents in School Census Tract [#]	0.9399
Students in Boundary-to-Schools [#]	1.0259
Attended School Discipline Rate	1.2070
Attended School Stability Rate	4.9877***
% Students Black at Attended School	0.3232**
Intercept	1.9432
<i>Traditional Public Outside</i>	
Female	1.0251
Special Education	0.4148***

(Continued)

Table 4. (Continued).

	Model 1
	(base outcome)
<i>Assigned DPSCD School</i>	
ELL	0.1492***
Latinx	0.2825***
Asian	0.5820
White or MENA	0.5151*
Other Race	2.8815***
Economically Disadvantaged	0.7293***
Upper Elementary (3–5)	1.3578***
Middle School (6–8)	1.0455
High School (9–12)	2.7041***
Distance to Assigned School ⁺	1.7843***
School Concentration ⁺	1.0249
Assigned School Discipline Rate [#]	1.0598
Assigned School Stability Rate [#]	0.6973***
% Students Black at Assigned School [#]	2.6483***
Assigned School Average Math Z-Score [#]	1.0174
% Students Enrolled in Assigned School [#]	0.6668***
Crimes per 100 residents in School Census Tract [#]	0.6730***
Students in Boundary-to-Schools [#]	0.9076
Attended School Discipline Rate	0.7090
Attended School Stability Rate	0.7654
% Students Black at Attended School	0.0820***
Intercept	2.7721**
<i>N students</i>	96,963
<i>(N assigned schools per school level)</i>	(123)
<i>Log Likelihood</i>	-150,321.1000
<i>Pseudo-R²</i>	0.1801

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: coefficients are presented as relative risk ratios

⁺standardized at the student-level

[#]standardized at the school-level

much more likely to attend DPSCD magnet schools in high school compared to their assigned school, but much less likely to attend a neighborhood charter for high school. These differences are probably more of a function of supply than demand: for example, there are not that many neighborhood charter high schools, and the most seats available in DPSCD magnet schools are at the high school level.

The odds for student-level geographic factors in this model emphasize the role of geography in pushing and pulling students. First, students who live farther from their assigned schools are more likely to attend all different school types compared to their assigned schools. Second, students with a higher concentration of schools within their neighborhood radius have

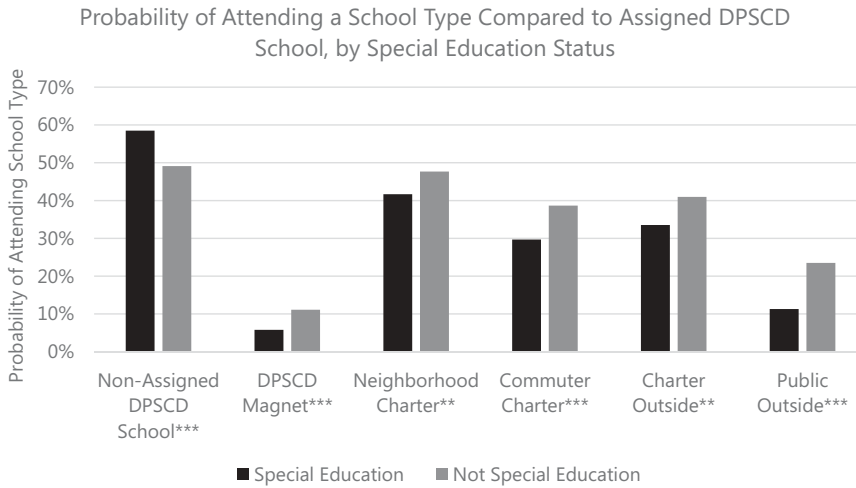


Figure 3. Probability of attending a school type compared to assigned DPSCD school, by special education status. *p < .05, **p < .01, ***p < .001

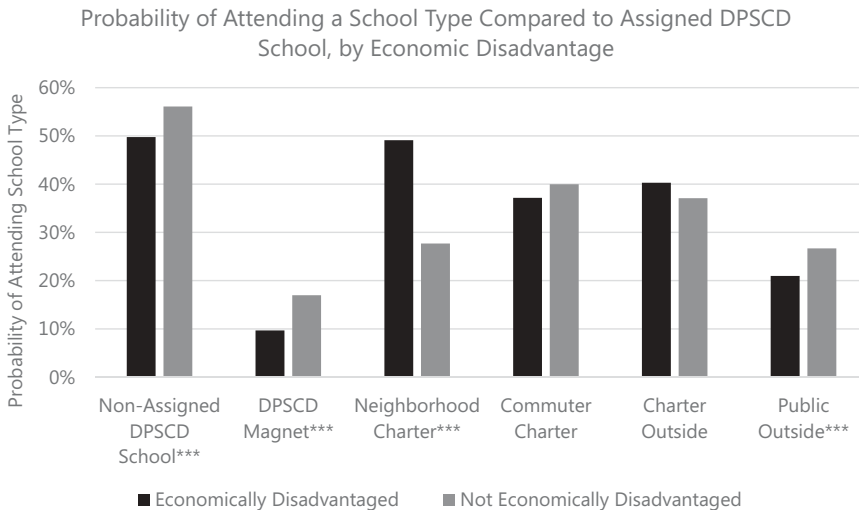


Figure 4. Probability of attending a school type compared to assigned DPSCD school, by economic disadvantage. *p < .05, **p < .01, ***p < .001

higher predicted odds of attending DPSCD magnet schools and neighborhood charters; but school concentration is not a significant predictor for the other school types.

The varying associations of school-level push and pull factors by school type suggest that students using different choice mechanisms may be pushed or pulled by different factors. These differences can be seen in the associations

between school types and the “push” characteristics of a student’s assigned school. Students have lower predicted odds of attending DPSCD magnets, neighborhood charters, and schools outside the city if their assigned schools have higher stability rates. The association is largest, however, for students at neighborhood charters: a 5% (one standard deviation) increase in student stability at the assigned school decreases a student’s odds of attending a neighborhood charter by over 50%. Similarly, the discipline rate of a student’s assigned school is only a statistically significant predictor for students choosing magnet schools. The odds of a student attending a DPSCD magnet schools increase by nearly 30% for an 11% increase (one standard deviation) in the discipline rate at the assigned school. In addition, a higher percentage of black students at one’s assigned school predicts higher odds that a student will enroll in a school outside the city (charter or traditional public) compared to the assigned school, but it is not a statistically significant predictor for the other school types. Finally, for all school types except commuter charters, the math scores at one’s assigned school is not statistically significantly associated with the odds of choosing that school type instead of the assigned school.

The odds related to the “pull” factors of a student’s attended school also vary by school type. Students are predicted to have lower odds of going to non-assigned DPSCD schools and schools outside of Detroit when those schools have a higher percentage of black students. At the same time, students have higher odds of attending commuter charters when those schools have higher percentages of black students. For stability rates, students have much higher predicted odds of attending DPSCD magnets, neighborhood charters, commuter charters, and charters outside the city when those schools have higher stability rates. Finally, a higher discipline rate is associated with lower odds of attending DPSCD magnet schools and traditional public schools outside of Detroit, whereas a higher discipline rate at neighborhood charters is actually associated with higher odds that a student will choose that school over their assigned school.

Socio-spatial factors had a somewhat varied association across different school types as well. When a greater number of students in one’s attendance boundary enroll in their assigned school, the odds of attending every other school type were lower compared to the assigned school. However, a higher student-to-school ratio in one’s attendance boundary (which means greater concentration in fewer schools, and may suggest a greater propensity for choosing among neighborhood peers) is only associated with lower odds for enrolling in non-assigned DPSCD schools, DPSCD magnet schools, and traditional public schools outside of the city. Finally, a greater number of crimes per 100 resident in the assigned school’s census tract was only statistically significant for enrolling in traditional public schools outside the city. Among the results for these socio-spatial factors, the number of students in one’s attendance boundary that attend their assigned school stands out as a consistent and potentially important influence on the push and pull of school choice in Detroit.

Discussion & conclusions

This study examined whether a particular combination of school choice policies is associated with student stratification in Detroit. The results show that Detroit's school choice landscape is somewhat stratified across different types of schools. Further, different students have higher predicted odds of choosing different kinds of schools – supported by different school choice mechanisms – based on different demographic, “push,” and “pull” factors. In addition to these differences, students choosing all school types appear to be pushed by living farther from their assigned schools or by peer effects when fewer of the students in their neighborhood attend their residentially-assigned school.

These findings reflect prior research on how families choose schools in a marketized educational policy landscape. Families engage in bounded school choosing (Jabber, 2011), circumscribed by their positionality (Cooper, 2005), socio-spatial disposition (Yoon & Lubienski, 2017), the physical geography of the city (Bell, 2009b), and access to resources that enable choice-making (Hamlin, 2018). Students who are economically disadvantaged may be less likely to use avenues for choice that require much greater travel distances (Bell, 2009a; Wilson, Marshall, Wilson, & Krizek, 2010). Even though a large majority of Detroit students attending any school type are black, different avenues for choice are noticeably used differently across racial groups. Finally, students receiving special education services may be more limited in the choices they can or do make (Waitoller & Lubienski, 2019). This study contributes a perspective that stratified enrollment patterns should not be examined for a single school choice policy, but rather by a particular combination of choices for students between different schools within a traditional public school district, between charters and traditional public schools within a city, and between schools in a city and its suburbs.

Stratification of students within Detroit is modest when considered in the context of segregation between Detroit and its surrounding suburban communities. Many advocates of school choice have embraced policies that allow students to choose suburban schools, such as inter-district open enrollment and charters outside the city, as an opportunity to promote racial integration across district lines. Unlike the court-enforced segregation policies that preceded *Milliken*, however, choice policies operate in and contribute to a dynamic landscape in which individual choice-making and socio-spatial factors can limit their desegregative potential. Indeed, Lenhoff et al. (2019b) examined enrollment patterns for Detroit “exiters” from 2010–11 through 2017–18, and found that “the average school in Black Exiters’ Detroit choice sets was 97% Black or Latinx, compared to their suburban schools which had 88% Black or Latinx students. Non-Black students, however, had much lower rates of Black or Latinx students” (p. 15). Thus, while students who enroll in suburban charters or use inter-district open enrollment could theoretically

attend less racially and socioeconomically isolated schools, evidence from Detroit suggests that such policies are not responsive to how socio-spatial dynamics can reproduce patterns of racial segregation (Edwards & Cowen, 2019; Lenhoff et al., 2019b; Pogodzinski et al., 2018).

The broad assessment of enrollment patterns presented in this paper highlights the need for more research to understand the mechanisms through which different choice policies may produce stratification. Indeed, the data in this study were limited in a few important ways. The administrative data that forms the core of the analysis does not allow for a deeper interrogation of the motivations or unique circumstances of a given family, nor can it be easily connected with more nuanced data on students' socioeconomic circumstances, access to transportation, or other important factors related to school choosing. The study is also restricted to a single year of observations, and thus cannot assess how these patterns may change over time as a result of either families' choice patterns or new policy developments in the educational landscape.

Future research can start by collecting additional data on push and pull factors. On the “demand” side, interviews and surveys of parents' particular motivations, dispositions, and understandings of different school types should be conducted. Specific data on mode of transportation and commute times may be especially important for understanding the socio-spatial dimension of these enrollment patterns (Scott & Marshall, 2019). More precise socioeconomic data on students, especially in a racially segregated and high-poverty context, may illuminate hard-to-observe dimensions of stratification (Hamlin, 2018). On the “supply” side, more research is required to parse the divergent incentives that shape urban districts' intra-district choice policies (Lenhoff, 2018), lead charter schools to open in particular places (Green, Sanchez, & Castro, 2019), or prompt districts to make inter-district enrollment easier or harder for students from other districts (Lenhoff, *in press*; Pogodzinski et al., 2018) – and the corresponding structures and practices that emerge from those incentives.

Future studies should also use causal inference techniques to determine whether particular combinations of school choice policies have stratifying effects. One approach would be to develop a logical counterfactual to current enrollment patterns (e.g. Bifulco et al., 2009b; Monarrez et al., 2019). Researchers may default-assign students in a counterfactual to their residentially-assigned schools; or, they could attempt to construct a more complex set of counterfactuals based on the elimination of some choice policies and not others. Where possible, a longitudinal approach to this line of inquiry would also be fruitful, as it could allow researchers to infer how enrollment patterns change over time as a result of the introduction of new policies. The challenge in longitudinal studies would be to account for the complex and multifaceted changes in cities that are related to the implementation of new choice policies in urban districts (Scott & Holme, 2016).

Further, while this study sought to contribute a nuanced picture of school choice dynamics by using a more granular school typology, the school types included in this study are subject to further scrutiny. Not all traditional public schools in the metro Detroit region, for example, are governed by the same rules for inter-district enrollment (Lenhoff, 2018). Also, charters outside of Detroit may need to be further divided based on whether most of their students come from Detroit or not (Lenhoff et al., 2019b). Schools could also be divided based on special academic offerings, such as the Montessori model, expeditionary learning, or an international baccalaureate program; or based on special themes, like foreign language, science and engineering, or performing arts. From a critical policy perspective (Diem, Young, & Sampson, 2018), educational research can continue to interrogate and evaluate the nuances and complexities of enacted choice-based policies and the consequences of marketization in particular educational landscapes.

Notes

1. The State of Michigan's Center for Educational Performance and Information (CEPI) indicates that a student is "economically disadvantaged" if the student meets any of the following criteria: are eligible for free or reduced-price meals via NSLP, live in households receiving food (SNAP) or cash (TANF) assistance, are homeless, are migrant, or are in foster care.
2. This study excludes DPSCD's "exceptional student education" centers, which are specifically designated to serve special education students with particular exceptionalities. In other words, even when excluding DPSCD's exceptional student education centers, non-assigned DPSCD schools still have an oversubscription of special education students compared to other school types.

Disclosure statement

No potential conflict of interest was reported by the author.

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