



RESEARCH REPORT

Motor City Miles

Student Travel to Schools in and around Detroit

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Contents

Acknowledgments	iv
Executive Summary	v
Motor City Miles	1
Data and Methods	3
Where Do Detroit Residents Attend School and How Far Do Students Travel to Get to Them?	5
Where Are Schools Located within the City of Detroit?	12
Attending School Outside of Detroit	17
Student Distance to High-Quality Schools	20
Conclusions	28
Appendix	31
Notes	35
References	37
About the Authors	38
Statement of Independence	39

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Executive Summary

Over the past three decades, policymakers have created systems of school choice as one strategy to expand access to high-quality schools and mitigate education inequality. Publicly funded school choice programs now include charter schools, the option to move within and between traditionally organized district schools, and, in some states, school vouchers for private tuition. One rationale for school choice is the opportunity for parents to select the alternatives to an assigned public school that better fit the needs of their child. However, in low-income and historically segregated communities, the burden of transporting children to schools outside of their immediate residential location may determine the extent to which parents have a meaningful choice of schools farther away. The role that transportation plays in limiting or enhancing the success of a school choice system is as yet underexamined by policymakers and policy analysts.

In this report, we describe access to educational opportunities for students living in Detroit, a city that has a rich system of public school choice available to its families through charter schools and interdistrict and intradistrict choice. Detroit is a large city (139 square miles) with a limited public transportation system relative to other cities (Urban Institute Student Transportation Working Group 2018), yet the city's proportion of students attending alternatives to their neighborhood school—especially charter school alternatives—is among the nation's highest. Detroit therefore provides an important case study of the interplay between transportation and choice. This report analyzes distances, travel times, and enrollment patterns for the 113,806 students living within the boundaries of the Detroit Public Schools Community District during the 2015–16 school year.

Key findings are as follows:

- On average, Detroit students live 7 to 12 minutes of drive time from the schools they attend. Black and Hispanic students travel farther to school than white and Asian students. Students attending charter schools in grades three and six travel farther to school than students attending traditional public schools in those grades. Additionally, students living closer to downtown have shorter drive times to school attended in ninth grade and more schooling options within a 10-minute drive in grades three, six, and nine.
- Less than 25 percent of Detroit students attend the nearest school to their home that offers their grade. Most students attend a school that is higher quality than their nearest school on average, based on different metrics of quality.

- About 19 percent of students living in Detroit attend a school outside of city limits. Students living near the northern, western, and eastern borders and white and Asian students are more likely to attend school outside of Detroit. In grades three and six, Detroit students who attend school outside the city are more likely to attend a charter school than students who remain in Detroit for school.
- Over 75 percent of high-quality schools that Detroit students have access to are located outside of Detroit, based on different metrics of quality. Though few Detroit students attend these schools, historically disadvantaged populations—black, Hispanic, economically disadvantaged, special education, and limited English proficient students—are less likely to attend high-quality schools than their more historically advantaged counterparts.

Motor City Miles

Where children live and where they attend school affects both their economic and educational opportunities (Carlson and Cowen 2015; Chetty, Hendren, and Katz 2016). For decades, these two determinants of students' outcomes were linked via assignment to public schools on the basis of neighborhood residential location. Over the past 20 years, however, states across the country have enacted substantial public school choice systems. The authorization of public charter schools—schools operating outside the traditional public school system—and open enrollment systems that allow parents to send their children to schools either within their residential districts but outside their neighborhood catchment areas (intradistrict choice) or outside their residential districts entirely (interdistrict choice) have been among the most prevalent school choice policies.

Within large urban settings, both forms of public school choice are especially dominant. The most recent data compiled from the US Department of Education indicated that nearly half of all parents in cities have some form of public school choice.¹ In some cities recovering from economic or other local crises, charter schools in particular have taken an expansive role in public education. In New Orleans, for example, 9 out of every 10 students now attend a charter school following Hurricane Katrina's destruction of the city school system. In Detroit, where economic catastrophe lingered longer and deeper after the Great Recession, nearly half of the city's children are now being educated in charter schools. The same is true for children in Flint, Michigan.² These three cities have led the nation for several years in the share of resident children attending charter schools (National Alliance for Public Charter Schools 2016).

School choice advocates have hailed such developments as indicators of new markets for parents, as consumers, to access different educational goods. Access to more and diverse school options, in this justification, not only provides parents with the opportunity to match their children's needs with a particular educational experience but, systemically, provides a check on school quality through school competition.³

The existence of publicly funded alternatives to traditional neighborhood assignment is necessary but insufficient alone to guarantee that parents are able to choose a school. A particular concern, especially in low-income and historically segregated communities, is the extent to which the burden of transporting children to schools outside of their immediate residential location may inhibit meaningful choice of schools farther away. Absent coordinated systems of transportation that typically exist within traditionally organized public school systems, such burdens may be insurmountable. Longer commutes

to school can also have direct and indirect effects on student outcomes, and direct transportation availability also varies by family race or ethnicity and income (Urban Institute Student Transportation Working Group 2018). For these reasons, perhaps, many parents in choice-rich cities prioritize distance to school as at least as important as academic quality (Glazerman and Dotter 2017; Lincove, Cowen, and Imbrogno 2018).

Two recent reports from the Urban Institute (Urban Institute Student Transportation Working Group 2017, 2018) have called new attention to the link between meaningful school choice and student transportation. In their examination of family distance to schools of choice in Denver, Detroit, New Orleans, New York City, and Washington, DC, the Urban Institute Student Transportation Working Group (2018) found substantial variation in travel times both between and within these five choice-rich cities. Depending on grade, race or ethnicity, and form of transportation (school bus, public transit, or personal car), the options students may have varies, including traditional public and charter or a more restricted set of opportunities.

This report narrows the focus to the metropolitan Detroit area. Here, the intersection of school choice and transportation is complex given that half of students remaining in the city of Detroit for school attend a charter school, and one out of every five students leaves the city entirely every day. Enrollment in both interdistrict choice and charter schools has grown steadily over time in Detroit. However, systemwide access to different schooling options remains varied.

Michigan law does not require nonresident districts to transport students from outside their boundaries, though some districts and charter schools elect to do so (Cowen and Creed 2017; Urban Institute Student Transportation Working Group 2018). Sixty-five percent of Detroit families depend on personal transportation to get to school, with another 20 percent using yellow school bus options and less than 10 percent electing other public transportation (Jochim et al. 2014). In addition to a richer understanding of the links between students' geographic access and educational opportunity in one of the nation's largest charter and nonneighborhood markets for public schools, a focus on Detroit is especially important given the city school system's lingering economic and educational distress. The newly formed Detroit Public Schools Community District (DPSCD) now exists in lieu of the previous, financially insolvent city district, but the district's new leadership faces a daunting task. On the recently released National Assessment of Educational Progress, Detroit ranked last in student performance among major urban districts across the country.⁴

This report expands upon and adds to the Urban Institute Student Transportation Working Group (2018) five-city report. We include

- an analysis of student transportation to schools outside of the city limits;
- extended analysis of school location within and outside Detroit city limits, with a focus on which student characteristics are associated with differences in the type and characteristics of the school attended; and
- a focus on school quality by geographic location.

This report also adds new information to previously released reports by other organizations. In particular, a recent report by IFF (2017), a Midwestern nonprofit community development financial institution, considered the location of Detroit city schools with a particular emphasis on school quality. Relative to that report, our study here includes the following in its analysis:

- Schools located outside the city of Detroit that Detroit residents attend
- Student-level data that permit comparison between students with different characteristics
- A definition of school access by commuting distance between census blocks or tracts of students' actual residences rather than neighborhood boundaries
- Assessment of school quality relative to other accessible schools in the Detroit metropolitan area on various measures of performance⁵

We begin by describing the data and methodology we used in this analysis. This provides documentation of our sources and a detailed description of the extent to which we can draw inferences about student and family choice within the Detroit metropolitan area. We then provide an overview of where students who live in Detroit attend school. Next, we analyze the distribution of school locations within the city itself, followed by a section devoted entirely to differences between students who attend school inside and outside of the city. Finally, we consider access to high-quality schools inside and outside the city on four different dimensions: academic outcomes (via Michigan's Accountability Rating), the share of chronically absent students in each school, student-teacher ratios, and, for high schools, student graduation rates. Finally, we summarize our findings and briefly assess the policy implications of this report.

Data and Methods

Our data, which come from the Michigan Department of Education (MDE) and the Center for Educational Performance and Information, contain the population of students from the 2015–16 school year. We restrict the data to students who lived within the boundary of DPSCD and attended a

traditional public school or a charter school that offered general education in the three intermediate school districts serving the majority of Detroit students: Wayne Regional Education Service Agency, Macomb Intermediate School District, and Oakland Schools.⁶ If a student appears multiple times in the dataset in one year because of multiple home addresses or schools attended, we use the first observation in the dataset. We did not have information on which school the student attended first. Unless otherwise noted, we focus on students in grades three, six, and nine to provide snapshots of Detroit children in grades that are typically in elementary, middle, and high school.

We calculate driving times (in minutes) and distances (in miles) for each student from his or her census block or tract to his or her attended school as well as to all schools serving his or her grade. For distances within a two-mile radius (as the “crow flies”), drive time was calculated from the center of each students’ home census block to the center of each school’s census block. For distances more than two miles, drive time and distance were calculated from the center of each students’ home census tract to the center of the school’s census tract. We estimate driving times and distances using the Google Distance Matrix application programming interface (API). Because the Google API does not calculate drive times or distance from the past, drive times were calculated between September 2017 and March 2018 assuming usual traffic at 8:00 a.m. on a weekday. Moreover, because we do not have access to public school bus routes and have limited access to public transportation travel time estimates (within Detroit only), we do not attempt to approximate actual travel times for students using those options. Thus, our analysis reports present-day distance, in miles, and driving time, in minutes, for the most direct driving routes to school for students living in Detroit in 2015–16. Because of this, our calculations should be used to provide an indication of the *relative* travel differences between students of varying age, demographic, economic, academic, geographic, and school-sector characteristics. This should not be read as direct estimates of the actual minutes spent traveling for a typical Detroit schoolchild.

As shown in table 1, the vast majority of Detroit children are either black or Hispanic and economically disadvantaged (the state’s indicator for free or reduced-price lunch eligibility and eligibility for other needs-based services).⁷ Because few white students are in the data and for ease of interpretation in tabulated data below, we focus in this report on differences between traditionally underrepresented minority (URM) students in the broader US population—primarily black and Hispanics—and non-URM students, primarily white and Asian American students.⁸ Approximately 15 percent of students are flagged with a special education indicator, and 11 percent are flagged with an indicator for limited English proficiency. More than 4 in 10 students who live in the city attend a charter

school, although as this report details below, that figure is larger or smaller depending on student grade and whether they leave or remain in the city to attend school.

TABLE 1

Characteristics of Students Living in Detroit Who Attend a Michigan Public School

Characteristic	N	Share of students
Female	56,218	49%
Male	57,588	51%
Black	94,498	83%
Hispanic	11,465	10%
White	5,038	4%
Asian	1,454	1%
Other race or ethnicity	1,351	1%
Not economically disadvantaged	17,171	15%
Economically disadvantaged	96,635	85%
English proficient	101,850	89%
Limited English proficient	11,956	11%
Not special education	97,740	86%
Special education	16,066	14%
Traditional public school	65,545	58%
Charter	48,261	42%
Total	113,806	

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education and the Center for Educational Performance and Information.

Where Do Detroit Residents Attend School and How Far Do Students Travel to Get to Them?

To begin, we consider the basic question of how far students live from the schools they attend. Table 2 provides average drive time and driving distance, in miles, for Detroit-resident children across all grades. On average, third graders live approximately 3 miles, sixth graders live 3.4 miles, and ninth graders live 5.4 miles from their schools.

Table 3 provides these calculations by student demographic, economic, and academic subgroups as well as by school sector (charter or traditional public school). URM students tend to live slightly farther from their attended schools, with third graders living 3.1 miles (7.6 minutes), sixth graders 3.5 miles (8.3 minutes) and ninth graders 5.5 miles (11.5 minutes) compared with 2.5 miles (6.9 minutes), 2.5 miles (6.8 minutes), and 4.1 miles (9.5 minutes), respectively, for non-URM students. On the other hand, across these three grades, economically disadvantaged and limited English proficient students tended to live slightly closer than students without those indicators. Few differences are apparent based on gender and special academic needs status. Finally, students in grades three and six travel farther if their

school is a charter school—likely reflecting the fact that noncharter students attend a school based on neighborhood location. Yet, the difference between those attending traditional public schools and those attending charter schools are minor for ninth graders. If anything, ninth grade charter students are slightly closer to their homes.

TABLE 2
Average Driving Times and Distances between Home and School

Grade	Observation	Drive time (minutes)	Driving distance (miles)
K	9,377	7.16	2.83
1	9,534	7.13	2.82
2	9,137	7.25	2.88
3	9,235	7.53	3.04
4	9,351	7.67	3.13
5	8,688	7.86	3.26
6	8,446	8.18	3.43
7	8,440	8.55	3.61
8	8,141	8.86	3.80
9	9,820	11.34	5.39
10	9,081	11.30	5.33
11	7,214	11.44	5.45
12	7,342	11.76	5.66

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Figures 1 and 2 plot average drive time to school in minutes based on students’ home census tracts for third and ninth graders.⁹ These figures depict the same general pattern as tables 1 and 2: students’ drive time increases as they progress into upper grades. This pattern was also apparent in the Urban Institute Student Transportation Working Group’s (2018) five-city report, which included Detroit. Detroit and New Orleans had the steepest increase in drive time between middle and high school, but in Denver and Washington, DC, the steepest increase was between elementary and middle school. New York City’s increase was more steady throughout all grades.

Figures 3 and 4 further illustrate why, in Detroit, distance is particularly notable for ninth graders: those living away from the city center (where most high schools are clustered) have far fewer schools within a 10-minute driving radius.

TABLE 3

Average Distance and Drive Times by Student Characteristics

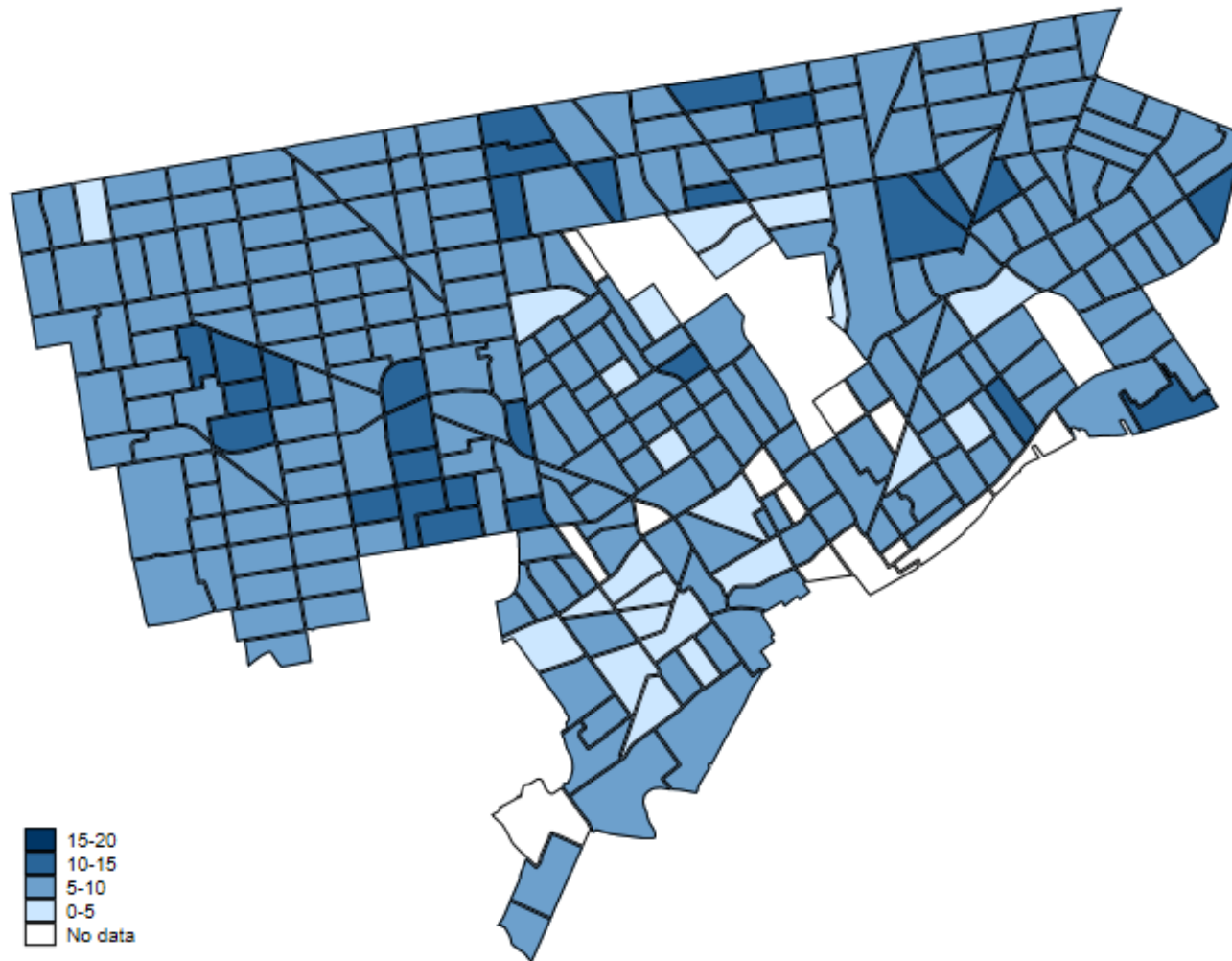
	Third Grade				Sixth Grade				Ninth Grade			
	N	% attending	DTM	DDM	N	% attending	DTM	DDM	N	% attending	DTM	DDM
Female	4,532	49%	7.48	3.04	4,084	48%	8.33	3.52	4,774	49%	11.43	5.44
Male	4,703	51%	7.57	3.04	4,362	52%	8.05	3.34	5,046	51%	11.26	5.35
White or Asian	550	6%	6.93	2.45	527	6%	6.81	2.45	560	6%	9.45	4.14
Underrepresented minority	8,685	94%	7.56	3.08	7,919	94%	8.27	3.49	9,260	94%	11.46	5.47
Not economically disadvantaged	1,080	12%	8.12	3.46	1,175	14%	8.5	3.66	1,593	16%	12.16	5.94
Economically disadvantaged	8,155	88%	7.45	2.98	7,271	86%	8.13	3.39	8,227	84%	11.19	5.29
English proficient	7,962	86%	7.73	3.22	7,568	90%	8.34	3.57	8,981	91%	11.58	5.60
Limited English proficient	1,273	14%	6.21	1.94	878	10%	6.84	2.20	839	9%	8.79	3.21
Not special education	7,963	86%	7.50	3.03	7,115	84%	8.10	3.39	8,269	84%	11.43	5.44
Special education	1,272	14%	7.70	3.08	1,331	16%	8.60	3.64	1,551	16%	10.87	5.13
Attends TPS	4,878	53%	6.13	2.27	4,377	52%	6.72	2.54	6,591	67%	11.51	5.44
Attends charter	4,357	47%	9.09	3.91	4,069	48%	9.75	4.39	3,229	33%	10.99	5.29
Total	9,235		7.53	3.04	8,446		8.18	3.43	9,820		11.34	5.39

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Note: DDM = driving distance (miles); DTM = drive time (minutes); TPS = traditional public school.

FIGURE 1

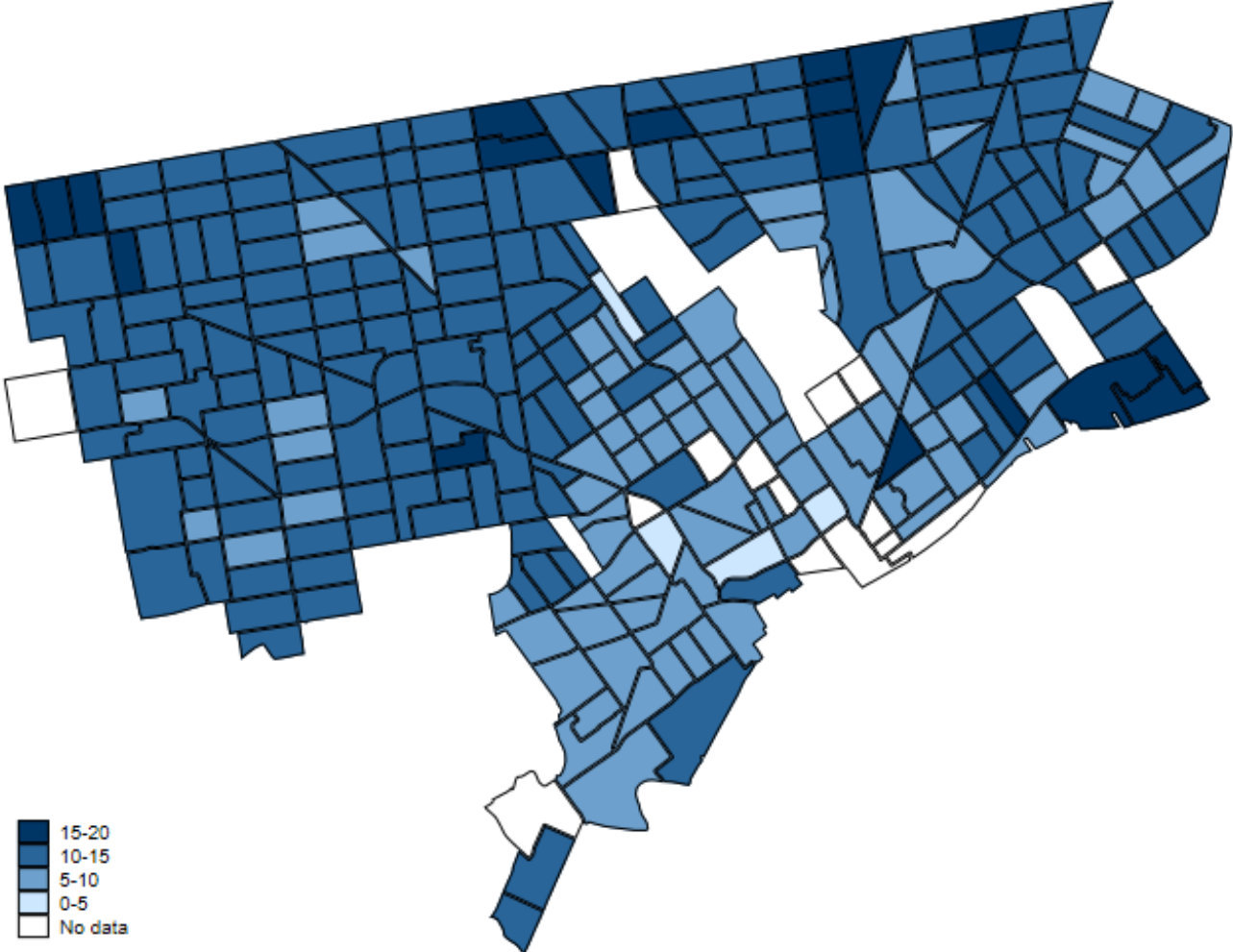
Average Drive Time in Minutes to School Attended by Census Tract, Third Grade



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

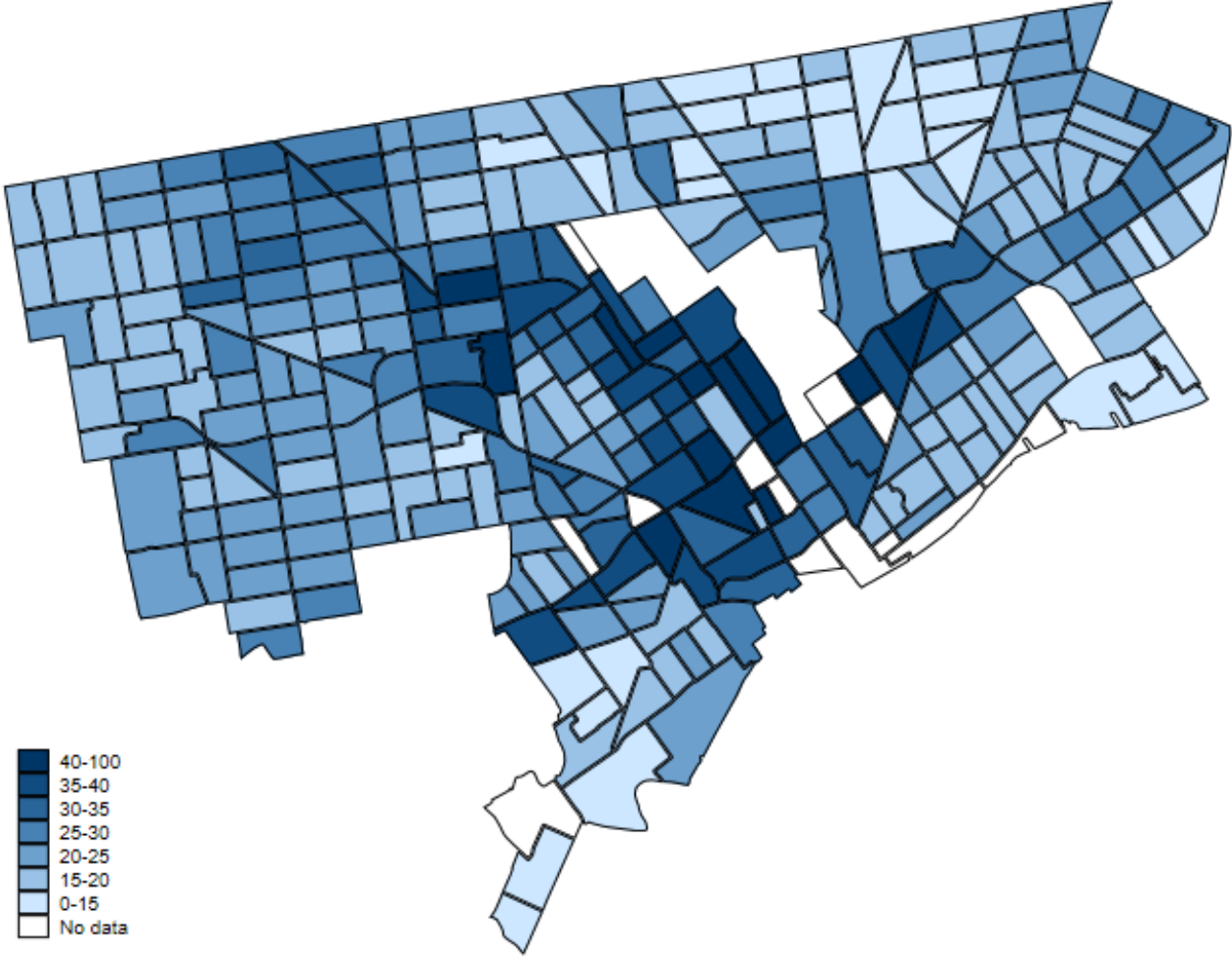
FIGURE 2
Average Drive Time in Minutes to School Attended by Census Tract, Ninth Grade



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

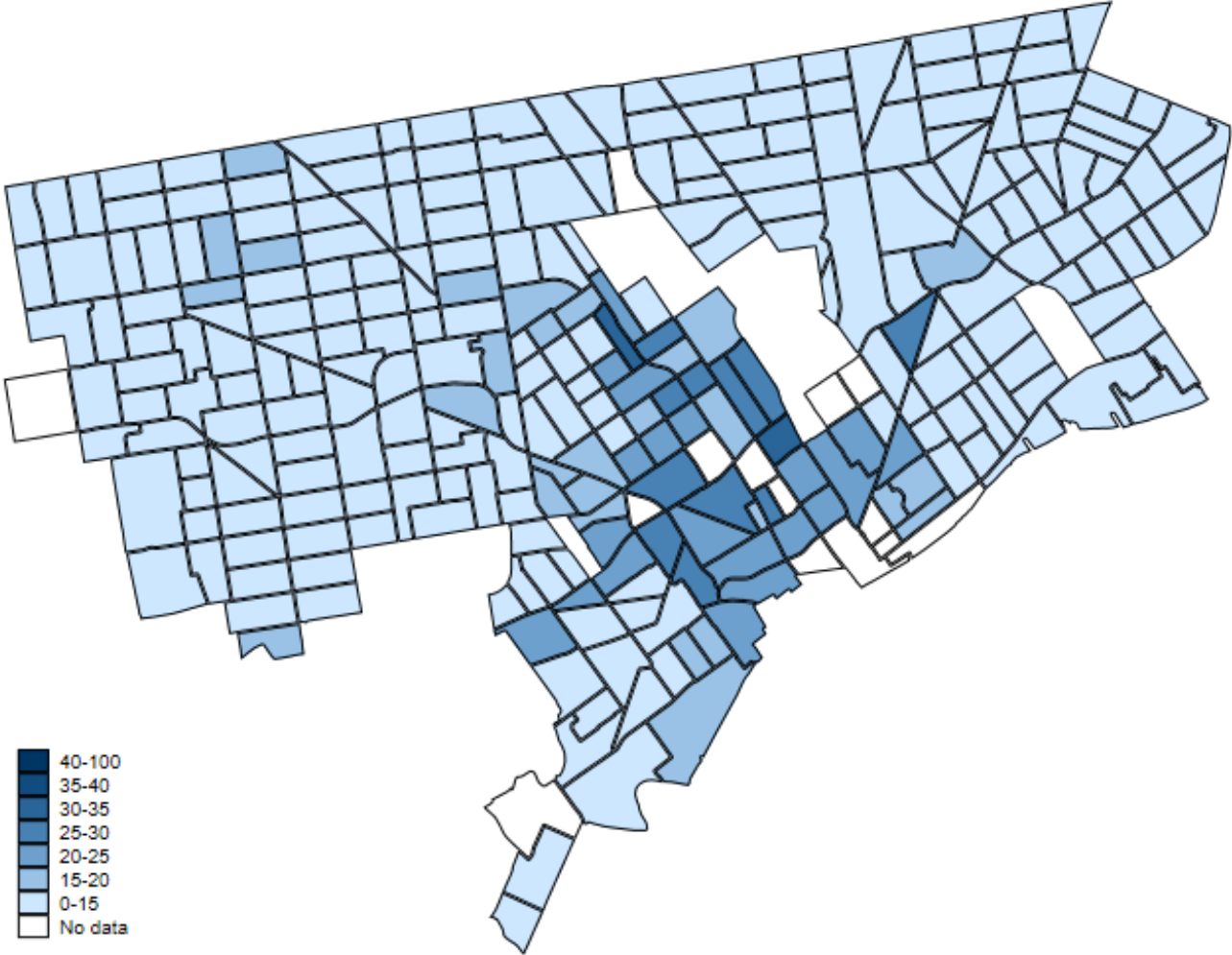
FIGURE 3
Number of Schools within 10 Minutes of Driving, Third Grade



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

FIGURE 4
Number of Schools within 10 Minutes of Driving, Ninth Grade



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Where Are Schools Located within the City of Detroit?

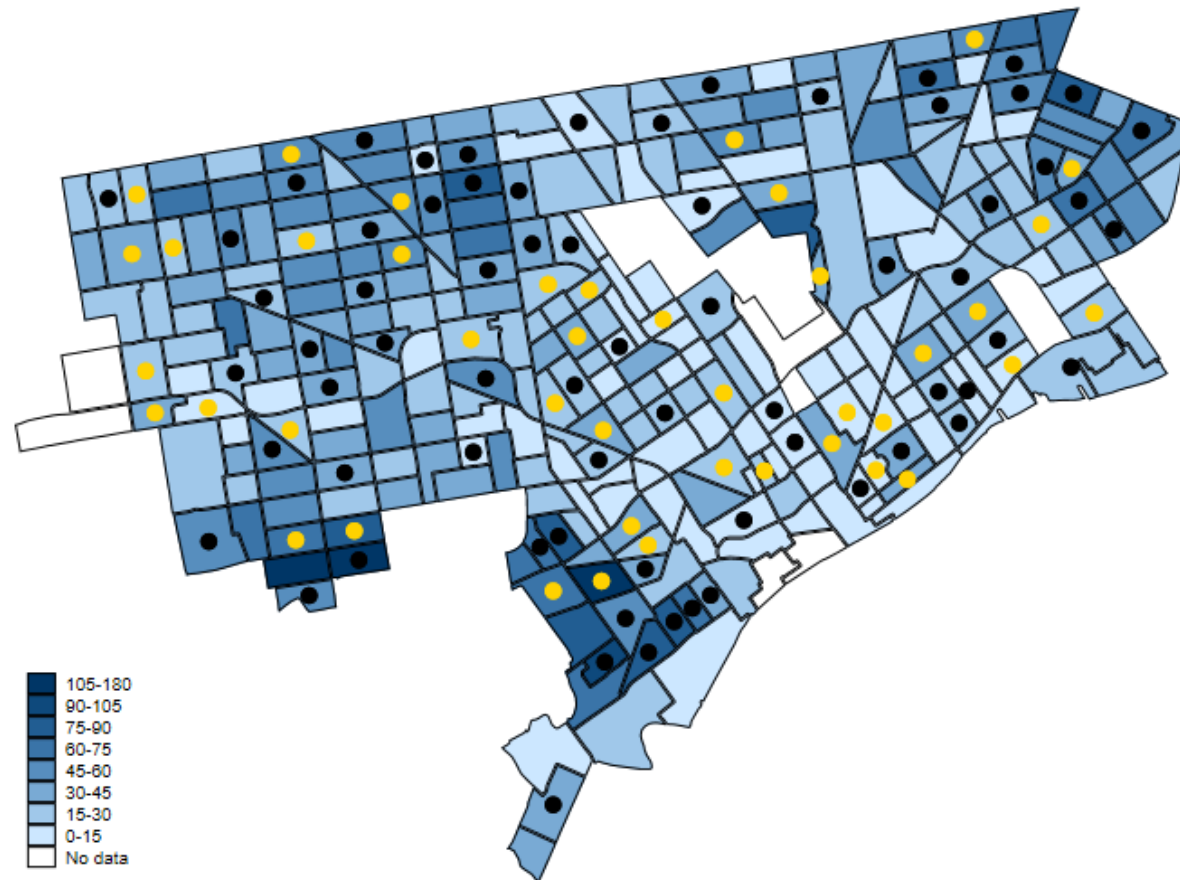
The driving and mileage calculations presented above are determined by students' home census tracts, the locations of the schools available, and the schools students actually attend. Media coverage of schooling in Detroit has emphasized the existence of some “education deserts” in parts of the city—a dearth of reasonably well-performing academic options—because of a combination of economic and policy-related factors.¹⁰ In this section, we first consider school locations throughout the city of Detroit and then consider specifically whether students are attending schools in and around their residences.

Figures 5 and 6 show DPSCD schools (the traditional public schools located in Detroit) and charter schools (in black and yellow, respectively) as they are located throughout the city. The figures divide these schools into those serving grades three and nine.¹¹ As our analysis has shown, ninth-grade students travel at greater distances and times to their schools, but such a pattern could in its own right be explained simply by the fact that there are fewer high schools in general, even if those high schools were located all over the city. Figures 5 and 6 indicate that high concentrations of students in these grades are located primarily toward the outer edges of the city but also that schools offering third grade are spread throughout the city.

On the other hand, figure 6 shows that schools offering ninth grade are clustered disproportionately downtown. This indicates that fewer high schools and a disproportionate concentration of high schools in areas where students do not live are driving the increased driving and mileage for ninth graders.

FIGURE 5

Population Density of Detroit Third Graders and Location of DPSCD and Charter Schools Offering Third Grade



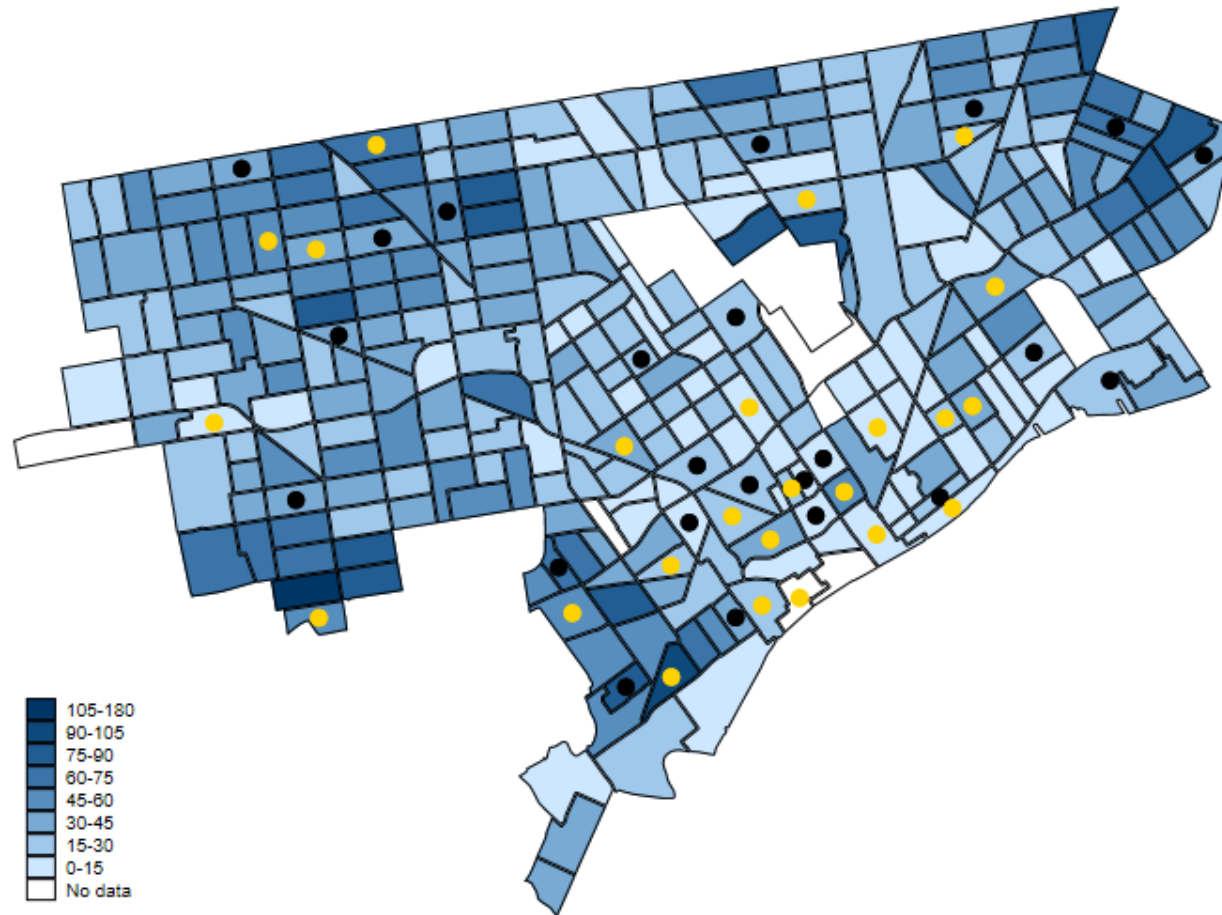
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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Notes: DPSCD = Detroit Public Schools Community District. DPSCD schools are colored in black, charter schools in yellow. Darker shades of blue indicate census tracts with increasingly larger concentrations of in-grade students. If a tract contained a DPSCD school and a charter school, it is represented as a DPSCD school.

FIGURE 6

Population Density of Detroit Ninth Graders and Location of DPSCD and Charter Schools Offering Ninth Grade



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Notes: DPSCD = Detroit Public Schools Community District. DPSCD schools are colored in black, charter schools in yellow. Darker shades of blue indicate census tracts with increasingly larger concentrations of in-grade students. If a tract contained a DPSCD school and a charter school, it is represented as a DPSCD school.

How far do students live from these schools, regardless of whether they attend them? Table 4 and figure 7 provide two ways to consider this question. First, table 4 reports average drive time and mileage to students' nearest school, regardless of sector, as well as to the nearest DPSCD school and nearest charter school. As shown in figures 5 and 6, third graders live closer to their nearest school than ninth graders. Our findings that students attending charter schools in those grades tend to travel farther and that the distance to the nearest DPSCD school is actually greater than the distance to any school (specifically once charters are included) imply that when students attend a DPSCD school, they tend to be more likely to attend their nearest school offering the relevant grade (figure 7). Table 4 also indicates that, on average, students in grades three and six live slightly farther away from the nearest charter school than the nearest DPSCD school, but ninth graders live about the same distance from their nearest charter and DPSCD school.

TABLE 4
Average Drive Time, Distance to, and Share of Students Attending Nearest Schools

Grade	Nearest School (Any)			Nearest DPSCD School			Nearest Charter School		
	DTM	DDM	% attending	DTM	DDM	% attending	DTM	DDM	% attending
Third	2.56	0.64	25%	3.22	0.85	23%	4.00	1.13	10%
Sixth	2.71	0.69	21%	3.42	0.90	21%	3.94	1.27	9%
Ninth	4.22	1.22	11%	5.40	1.66	9%	5.28	1.69	7%

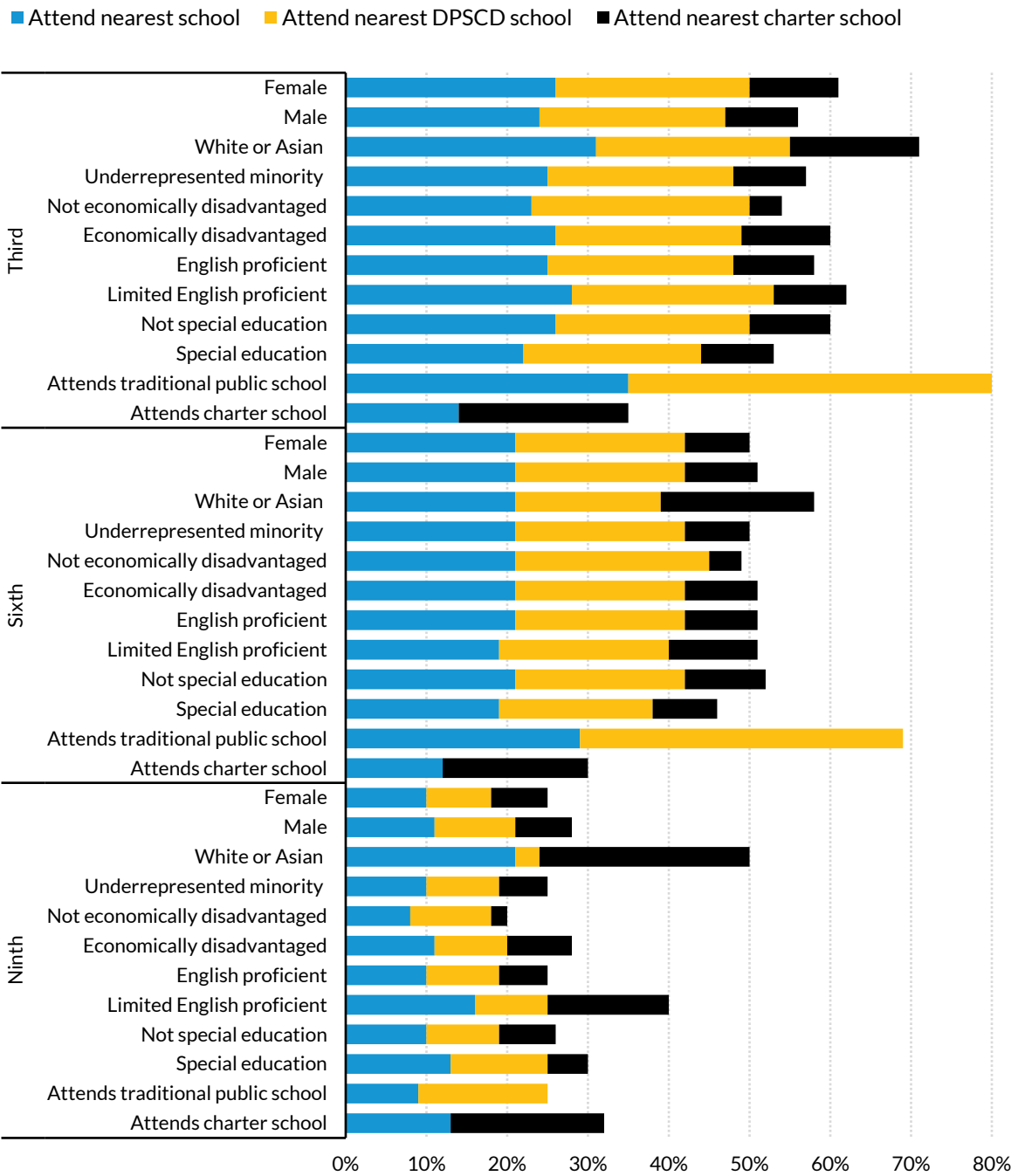
Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Note: DDM = driving distance (miles); DPSCD = Detroit Public Schools Community District; DTM = driving time (minutes).

Who attends their nearest schools? Figure 7 reports these differences by student demographic, economic, and academic status. Generally, there are few differences by most characteristics. However, underrepresented minority students are less likely to attend their nearest schools overall, but this appears nearly entirely driven by the overrepresentation of white and Asian students attending their nearest charter school. In fact, underrepresented minority sixth and especially ninth graders are more likely to attend their nearest DPSCD school among those attending that sector.

FIGURE 7

Share of Students Attending Nearest School by Minority Status



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Note: DPSCD = Detroit Public Schools Community District.

Attending School Outside of Detroit

Thus far, we have reported school distance and drive times for children who live in Detroit, regardless of where they attended school. However, Michigan’s interdistrict open enrollment system provides substantial opportunity for students in most districts to attend school in nonresident, adjacent districts, and Detroit children can also attend charter schools outside the city limits. In this section, we describe the school-related travel distances of Detroit residents who leave the city to attend school.

Table 5 indicates that approximately 20 percent of all Detroiters in grades three, six, and nine leave the city limits to attend schools. These percentages are comparable across each grade. Figure 8 displays the share of children leaving the city by census tract of residence. These figures provide a clear picture of the exodus of city students from tracts that border other jurisdictions. This is partly driven by the fact that more residents live outside the downtown area to begin with (figures 5 and 6) but not necessarily in the tracts that actually share a border with other cities. The heaviest Detroit enrollment losses come from tracts on the far ends of city limits, in particular the northwestern as well as the northern, western, and northeastern borders (figure 8).¹²

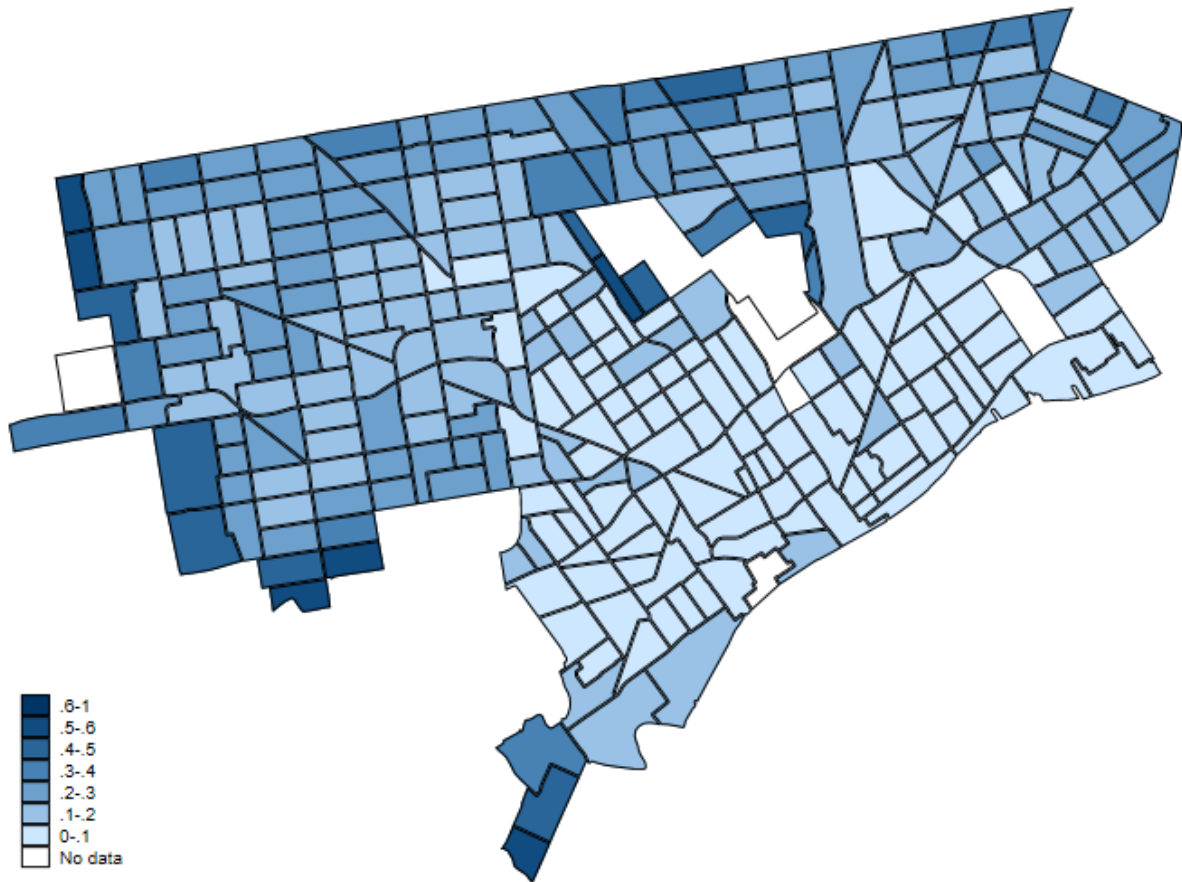
TABLE 5
Student Enrollment by Location

Grade	School type	N	% attending
Third	Inside Detroit	7,512	81%
	Outside Detroit	1,723	19%
	Total	9,235	
Sixth	Inside Detroit	7,021	83%
	Outside Detroit	1,425	17%
	Total	8,446	
Ninth	Inside Detroit	7,664	78%
	Outside Detroit	2,156	22%
	Total	9,820	
3, 6, and 9 combined	Inside Detroit	22,197	80%
	Outside Detroit	5,304	20%
	Total	27,501	

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

FIGURE 8

Distribution of Students Attending School outside of Detroit, by Tract



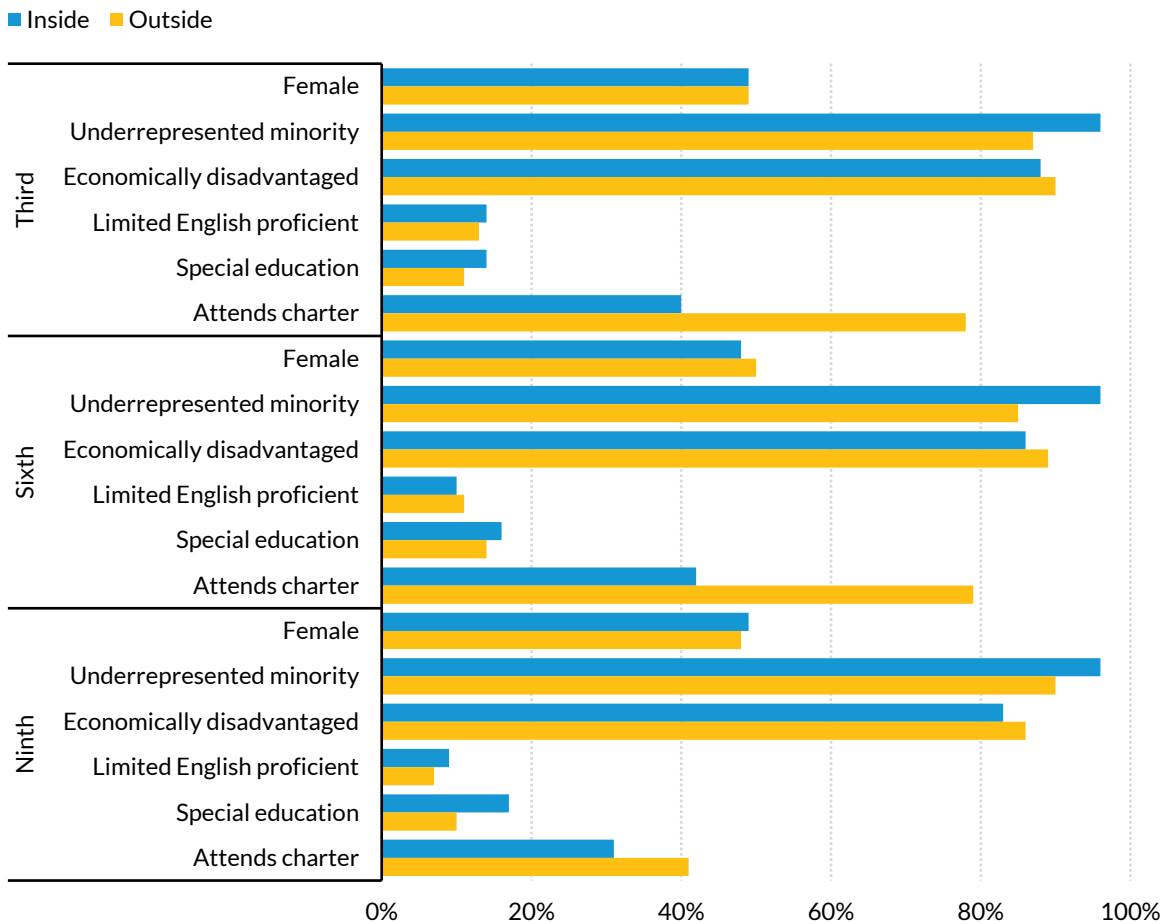
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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Who are these students? Figure 9 provides the demographic, economic, and academic characteristics of students who exit the city of Detroit by grade. Although a slightly higher proportion of ninth graders exit the city overall, as the previous table indicated, students in grades three and six who leave to attend charter schools contribute disproportionately to city exits. In fact, among those students who exit, the percentage of third and sixth graders who attend charters (77 to 79 percent) is far larger than the charter attendance rate among those who stay (40 to 42 percent). Such a difference, albeit smaller (41 percent compared with 31 percent), is also apparent for ninth graders. To put it differently, the majority of third and sixth graders who remain in Detroit and ninth graders, regardless of whether they leave the city or stay, attend traditional public schools (DPSCD, in the case of those who stay). In contrast, the vast majority of third and sixth graders who leave the city do so to attend a charter school.

FIGURE 9

Characteristics of Students Attending Schools inside and outside Detroit



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

There are, in general, few demographic or other characteristics significantly associated with exit from the city. Two exceptions concern student race and special academic needs status. Students who leave the city are more likely to be white or Asian: nearly three times as many white or Asian third and sixth graders and more than twice as many white or Asian ninth graders leave the city than white or Asian students who stay. White families are also more likely to live in tracts near the border with a suburb as well. In addition, among students with disabilities, more remain in the city, especially in ninth grade. This may partly be a function of these students preferring to remain in district schools if they are receiving specialized busing services to DPSCD schools (which may be mandated in their individualized education plans).

How far do these students travel to attend school? Students who leave the city travel farther to school than those who stay, and those differences are greater for older children (table 6). Although students who remain in the city to attend TPS through DPSCD live closer to their schools than those who remain in the city to attend a charter school, the opposite pattern is apparent among those who leave the city. Students in all grades who leave the city to attend a TPS through interdistrict choice travel farther than students who leave to attend charters—indeed, they travel farther than any other Detroit students. For third and sixth graders, the difference is well over a mile in additional travel, and for ninth graders, the difference is nearly two-thirds of a mile.

TABLE 6

Average Drive Times and Distances between Home and School, by School Location and Sector

Grade	School	Observation	Driving time (minutes)	Driving distance (miles)
Third	DPSCD	4,504	5.46	1.89
	Detroit Charter	3,008	7.78	3.12
	Total: Inside Detroit	7,512	6.39	2.38
	Outside Charter	1,349	12.03	5.66
	Outside TPS	374	14.12	6.76
	Total: Outside Detroit	1,723	12.48	5.90
Sixth	DPSCD	4,077	6.07	2.14
	Detroit Charter	2,944	8.64	3.74
	Total: Inside Detroit	7,021	7.15	2.81
	Outside Charter	1,125	12.65	6.09
	Outside TPS	300	15.66	7.85
	Total: Outside Detroit	1,425	13.28	6.46
Ninth	DPSCD	5,315	10.43	4.92
	Detroit Charter	2,349	9.82	4.66
	Total: Inside Detroit	7,664	10.24	4.84
	Outside Charter	880	14.12	6.99
	Outside TPS	1,276	16.03	7.63
	Total: Outside Detroit	2,156	15.25	7.37

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Note: DPSCD = Detroit Public Schools Community District; TPS = traditional public school.

Student Distance to High-Quality Schools

Thus far in this report, we have considered only geographic access to schools offering students' pertinent grades, whether these schools were TPS or charter schools or inside or outside Detroit city limits. In this section, we consider how these schools vary on another dimension—the quality of educational experiences offered within them. We recognize that the notion of “school quality” is itself a subjective construct, and whether and to what extent schools are held accountable by federal, state, or local jurisdictions for some metric of performance is an enduring debate among education

policymakers. We also recognize, however, that school ratings on different dimensions are a relevant part of the current policy environment, and school characteristics—regardless of whether schools are in control of them—can and do constitute an important part of parental decisionmaking, especially in high-choice environments (Lincove, Cowen, and Imbrogno 2018).

For these reasons, rather than choose a single metric of quality, we focus on four different metrics that capture different aspects of the educational experience within each school, and we leave to readers the opportunity to focus on which metric is most salient. These metrics are the school’s state-generated academic accountability rating, the share of chronically absent students, the student-teacher ratio in each school, and, for high schools, the graduation rate.

In particular, we calculate school quality as follows:

1. **School’s rating on the Michigan School Index System.** Index values range from 0 to 100. This is a composite measure made up of six components: student growth, student proficiency, school quality or student success, graduation rate, English-learner progress, and assessment participation.¹³ We use school index scores from the 2016–17 school year because they were the only available overall school rating at the time of this writing. We refer to this as a school’s accountability rating or ranking because the index is the accountability system for Michigan schools under the Every Student Succeeds Act (ESSA).¹⁴
2. **Share of students chronically absent.** Students are considered chronically absent by MDE if they missed more than 10 days of school.¹⁵ A school’s chronic absenteeism rate is created by dividing the number of chronically absent students by the school’s headcount. We use the state-reported chronic absenteeism rate for the 2015–16 school year.
3. **Student-teacher ratio.** Student-teacher ratio is created by dividing a school’s total number of students by the number of full-time equivalent teachers. We compute a school’s student teacher ratio for the 2015–16 school year. A school’s student-teacher ratio may reflect more of a resource than an indicator of quality, but this metric still captures an aspect of the educational experience students receive in that schools environment. It is also listed among the items that the state reports on its Parent Dashboard for School Transparency, its online resource “filled with important school-level information that parents and others say they want to know about Michigan public schools, including charter schools.”¹⁶
4. **Graduation rate.** We use four-year graduation rates reported by MDE for the year of analysis for the ninth-grade analysis only. If a student attended a school that offered 9th grade but not 12th grade, we excluded it from the graduation rate analysis.

For this report, we consider a school to be a “high-quality school” if it is in the top quartile of schools that students who live in Detroit attend (whether that school is inside or outside of Detroit) on any particular measure (for the student-teacher ratio and share of chronically absent indicators, this is actually the bottom quartile). These quartiles are calculated using all schools attended by students who live in Detroit, regardless of location or sector. We are, therefore, not comparing Detroit-area schools to the rest of the state or even the rest of Southeastern Michigan. Rather, we are comparing schools that Detroit students actually attend. Although the schools considered here may not be the highest-quality schools in the state, they are the highest-quality schools that students in Detroit attend.

Only 25 percent of high-quality schools—schools with low absentee rates, high accountability ratings, or graduation rates—that Detroit students attend are located within the city (figures 10 and 11). No schools within the city limits were in the high-quality quartile on student-teacher ratio or graduation rates metrics, although some schools outside the city (not pictured) were in more than one quality quartile.¹⁷ Most of the high-quality schools attended by students in Detroit are based on the metric of student-teacher ratios. Detroit children attending high-quality schools are for the most part doing so outside the city’s boundaries.

FIGURE 10

Location of High-Quality Schools Attended by Third Graders



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Notes: Yellow dots represent schools in the top quartile of accountability rating, black dots represent schools in the bottom quartile of students chronically absent, and blue dots represent the bottom quartile for student-teacher ratio.

FIGURE 11

Location of High-Quality Schools Attended by Ninth Graders



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Notes: Black dots represent schools in the bottom quartile of students chronically absent, blue dots represent the bottom quartile for student-teacher ratio, and pink dots (for high schools) represent schools in the top quartile of high school graduation rate.

These patterns are also reflected in tables 7 and 8, which do include schools from outside the city Detroit children attend. Table 7 indicates that students live almost twice as far from schools with high accountability ratings, low absenteeism rates, and high graduation rates than they do schools with low student-teacher ratios—those schools are primarily outside Detroit’s boundaries. Similarly, very few Detroit children actually attend those schools (table 8). For example, 3 percent of third graders attend a school that fell in the top quartile of accountability ratings, and only 11 percent of ninth graders did so. On the other hand, students are clustered much more proportionately into lowest student-teacher ratio schools—for each grade, the share of Detroit children in those schools is much closer to the 25 percent that would be expected under equal sorting of children between schools by quartile.

TABLE 7

Average Drive Time and Distance to Nearest High-Quality School

Grade	Accountability rating		Chronic absenteeism		Student-teacher ratio		Graduation rate	
	DTM	DDM	DTM	DDM	DTM	DDM	DTM	DDM
Third	8.21	3.12	7.62	2.99	4.69	1.41		
Sixth	8.10	3.14	6.41	2.16	5.09	1.57		
Ninth	10.57	4.46	8.20	3.07	5.73	1.79	8.34	3.17

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Notes: DDM = driving distance (miles); DTM = drive time (minutes). Calculations include all schools attended by students in Detroit, both inside and outside the city limits.

When examining student subgroups, there is one overarching pattern: student background is related to enrollment in a high-quality school, especially for older students (table 8). Ninth-grade Detroit residents with each of the major historical disadvantages have particularly limited access to high-quality schools on our measures. Ninth-grade Detroiters who are black or Hispanic, are economically disadvantaged, have special academic needs, or have limited English proficiency are especially unlikely to be in a school with a top accountability rating, low chronic absenteeism rate, or a high graduation rating. For the first two categories, similar percentages of students in grades three and six are in high-quality schools, regardless of economic or academic background. Black or Hispanic students in those earlier grades are, however, far less likely to be in a top accountability-rated or low-absentee school.

Table 9 presents the percentages by the location and sector of school attended. In all three grades analyzed, students attending non-DPSCD schools are more likely to attend schools with lower chronic absenteeism rates. Students attending charters inside and outside of the city are more likely to attend schools with lower student-teacher ratios than students in DPSCD schools. Though very few Detroit students attend high-quality schools as measured by accountability rating, students in grades three and six attending non-DPSCD schools are more likely to attend schools with a top-quartile accountability rating. In contrast, DPSCD students in ninth grade are more likely to attend a school with a high accountability rating, perhaps because some Detroit high schools require exam scores to attend. Additionally, ninth-grade students attending outside charters are the most likely to attend a school with a top-quartile graduation rate but very unlikely to attend a school with a high-quality accountability rating.

TABLE 8

Share of Students Attending a High-Quality School by Subgroup

Characteristic	Accountability rating	Chronic absenteeism rate	Student-teacher ratio	Graduation rate
Third grade				
<i>All students</i>	3%	5%	23%	
Female	4%	6%	23%	
Male	3%	5%	24%	
White or Asian	11%	17%	24%	
Underrepresented minority	3%	5%	23%	
Not economically disadvantaged	6%	7%	22%	
Economically disadvantaged	3%	5%	24%	
English proficient	3%	5%	25%	
Limited English proficient	3%	6%	15%	
Not special education	4%	6%	23%	
Special education	2%	4%	24%	
Attends TPS	2%	1%	16%	
Attends charter	5%	10%	32%	
Sixth grade				
<i>All students</i>	8%	13%	24%	
Female	8%	14%	25%	
Male	7%	12%	24%	
White or Asian	32%	28%	23%	
Underrepresented minority	6%	12%	24%	
Not economically disadvantaged	10%	12%	24%	
Economically disadvantaged	8%	13%	24%	
English proficient	7%	13%	26%	
Limited English proficient	13%	9%	13%	
Not special education	8%	14%	24%	
Special education	7%	8%	25%	
Attends TPS	4%	1%	14%	
Attends charter	12%	25%	35%	
Ninth grade				
<i>All students</i>	11%	11%	20%	16%
Female	13%	13%	20%	19%
Male	8%	10%	20%	13%
White or Asian	12%	21%	16%	31%
Underrepresented minority	10%	11%	20%	15%
Not economically disadvantaged	21%	14%	17%	26%
Economically disadvantaged	9%	11%	21%	14%
English proficient	11%	12%	21%	16%
Limited English proficient	7%	8%	11%	15%
Not special education	12%	12%	19%	18%
Special education	2%	7%	26%	4%
Attends TPS	16%	9%	15%	17%
Attends charter	0%	16%	30%	14%

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Notes: TPS = traditional public school. Calculations include all schools attended by students in Detroit, both inside and outside the city limits.

TABLE 9

Share of Students Attending a High-Quality School by Location and Sector

	Accountability rating	Chronic absenteeism rate	Student-teacher ratio	Graduation rate
Third grade				
DPSCD	2%	0%	17%	
Detroit charter	5%	11%	29%	
Outside charter	5%	9%	38%	
Outside TPS	9%	14%	5%	
Sixth grade				
DPSCD	4%	0%	15%	
Detroit charter	8%	28%	33%	
Outside charter	21%	18%	41%	
Outside TPS	10%	17%	9%	
Ninth grade				
DPSCD	17%	6%	15%	19%
Detroit charter	0%	15%	32%	5%
Outside charter	1%	19%	25%	40%
Outside TPS	9%	22%	14%	10%

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau

Note: DPSCD = Detroit Public Schools Community District; TPS = traditional public school.

It is possible, however, that our focus on a top-quartile definition of quality on each of these metrics masks a more nuanced picture of school access, especially in a high-choice area like Detroit. To consider this possibility, we report the differences between the schools students attend and their nearest schools on accountability rating, absentee rate, student-teacher ratio, and graduation rate (tables 10 and 11). On average, students are actually attending a school of slightly higher quality than their nearest available alternative. This pattern is consistent with a scenario in which families were exercising some degree of choice—whether into a charter school, interdistrict school, or intradistrict school within Detroit—to find a better school than their closest alternative. However, when the nearest school is within DPSCD, the relative advantage of attending an alternative to that nearby school is particularly strong. In fact, students who leave the city for either an outside charter or, especially, another city public school system tend to attend schools with substantially higher accountability and graduation rates and substantially lower absentee rates. Students remaining in DPSCD are actually in lower-quality schools on these measures, relative to their nearest alternative.

TABLE 10

Average Differences between School Attended and Nearest School

Grade	Accountability rating			Absenteeism rate			Student-teacher ratio			Graduation rate		
	NSA	NDS	NCS	NSA	NDS	NCS	NSA	NDS	NCS	NSA	NDS	NCS
Third	3.86	7.87	-4.79	-6.75	-16.42	-12.00	-0.12	-0.38	0.36			
Sixth	3.19	8.12	-5.48	-9.16	-20.07	-9.66	-0.02	-0.23	0.45			
Ninth	5.31	7.27	1.17	-2.79	-13.84	-6.62	6.32	6.87	6.14	8.96	13.81	1.98

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau

Notes: NCS = nearest charter school; NDS = nearest Detroit Public Schools Community District school; NSA = nearest school (any). Differences in absenteeism and graduation rates are percentage-point differences. Differences in accountability rating are reported in accountability points. Points range from 0 to 100.

TABLE 11

Average Differences between School Attended and Nearest School by Sector

	Accountability rating	Chronic absenteeism rate	Student teacher ratio	Graduation rate
Third grade				
DPSCD	-3.49	5.93	0.67	
Detroit charter	8.61	-15.75	-0.69	
Outside charter	14.42	-25.19	-1.88	
Outside TPS	17.35	-22.00	1.12	
Sixth grade				
DPSCD	-3.33	5.16	1.06	
Detroit charter	7.49	-21.90	-0.85	
Outside charter	13.02	-24.27	-2.23	
Outside TPS	13.59	-23.40	1.56	
Ninth grade				
DPSCD	5.12	4.75	3.20	9.58
Detroit charter	-0.49	-5.95	1.75	2.47
Outside charter	14.64	-23.59	0.05	20.34
Outside TPS	9.11	-14.65	31.86	9.51

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Note: DPSCD = Detroit Public Schools Community District; TPS = traditional public school.

Conclusions

This report extends a recent study by the Urban Institute Student Transportation Working Group (2018) of student travel in five cities with substantial school choice systems by focusing on student travel to school in and around the city of Detroit. We have noted that almost half of the students who remain in the city for school attend a charter school, and one out of every five students leaves the city every day to attend school. Systemwide access to schooling alternatives remains, however, varied, with

students attending charter schools or traditional public schools outside the city having differing options for nonpersonal transportation.

We find that most Detroit students live less than a 20-minute drive to their school of attendance, a reasonable level of access overall to the area's widespread diffusion of schools. There are, however, a number of ways in which student background and geography might help determine the extent to which students travel to make their choice—especially if that choice is toward a high-quality academic environment:

- Historically underrepresented minority students (black and Hispanic students, who make up the vast majority of students in this city) tend to travel longer—approximately 8 to 11 minutes, a half-minute to two minutes longer than their white and Asian counterparts—to school. This greater distance to school traveled by black and Hispanic students appears to be driven by the fact that these students are less likely to attend the nearest school to their residence and more likely to choose a charter school located slightly farther away.
- Ninth-grade students live farther from their schools, particularly since many high schools within the Detroit city limits are located in the central city area, away from where these students live. But schools serving lower grades are more widely dispersed.
- Students who leave the city are more likely to be white or Asian: nearly three times as many white or Asian third and sixth graders, and more than twice as many white or Asian ninth graders, leave the city than white or Asian students who stay.
- Among third and sixth graders who remain in Detroit, and among ninth graders, regardless of whether they leave the city or stay, the majority attend TPS schools (DPSCD, in the case of those who stay). In contrast, the vast majority of third and sixth graders who leave the city do so to attend a charter school.
- On three of four measures of school quality—academic accountability rating, chronically high absence rate, and graduation rate—most of the top schools Detroit residents attend are located outside of the city limits. Only on the measure of student-teacher ratios are most schools city students attend located in Detroit itself.
- Traditional public schools serving Detroit-based third and sixth graders but located outside the city tend to have the highest-quality measures relative to the nearest Detroit school available to these children; among ninth graders, that difference is greatest for outside charter schools.

- Ninth-grade Detroiters who are black or Hispanic, are economically disadvantaged, have special academic needs, or have limited English proficiency are especially unlikely to be in a school with a top accountability rating, low chronic absenteeism rate, or a high graduation rating.
- Black or Hispanic students in earlier grades are far less likely to be in a top accountability–rated or low absentee school.
- On average, students are actually attending a school of slightly higher quality than their nearest available alternative.

Although we still do not have a complete picture, these patterns provide further detail on the intersection of school choice, student travel, geographic, and academic opportunity available to students in the major education market of Detroit. These patterns are perhaps themselves a measure of the underlying contemporary currents operating in and around Detroit, which experienced a historic level of economic crisis through and in the wake of the Great Recession and continues to face major economic and demographic challenges. The city’s reorganized and renewed public school system continues to struggle academically. And expanded systems of school choice both within and outside the city limits may exacerbate rather than ease these difficulties.

Our report shows that access to school, especially schools of varying degrees of quality, is still more limited for students of color, low-income students, and, in some cases, students with particular academic needs—even within a population where those students make up substantial portions of the population. This suggests that better linking expanded choice to systemwide school improvements could be made by reducing transportation and travel barriers associated with attending schools located away from where students live. We also show that many struggling schools are located within the city and many of the more highly rated schools are outside the city, which suggests that choice and improved transportation access alone will not serve the needs of all students within a city emerging from crisis. For that to occur, improving opportunity for children in the schools located close to their homes and within their immediate communities is also an important part of the solution.

Appendix

FIGURE A.1

Average Drive Time in Minutes to School Attended by Census Tract, Sixth Grade

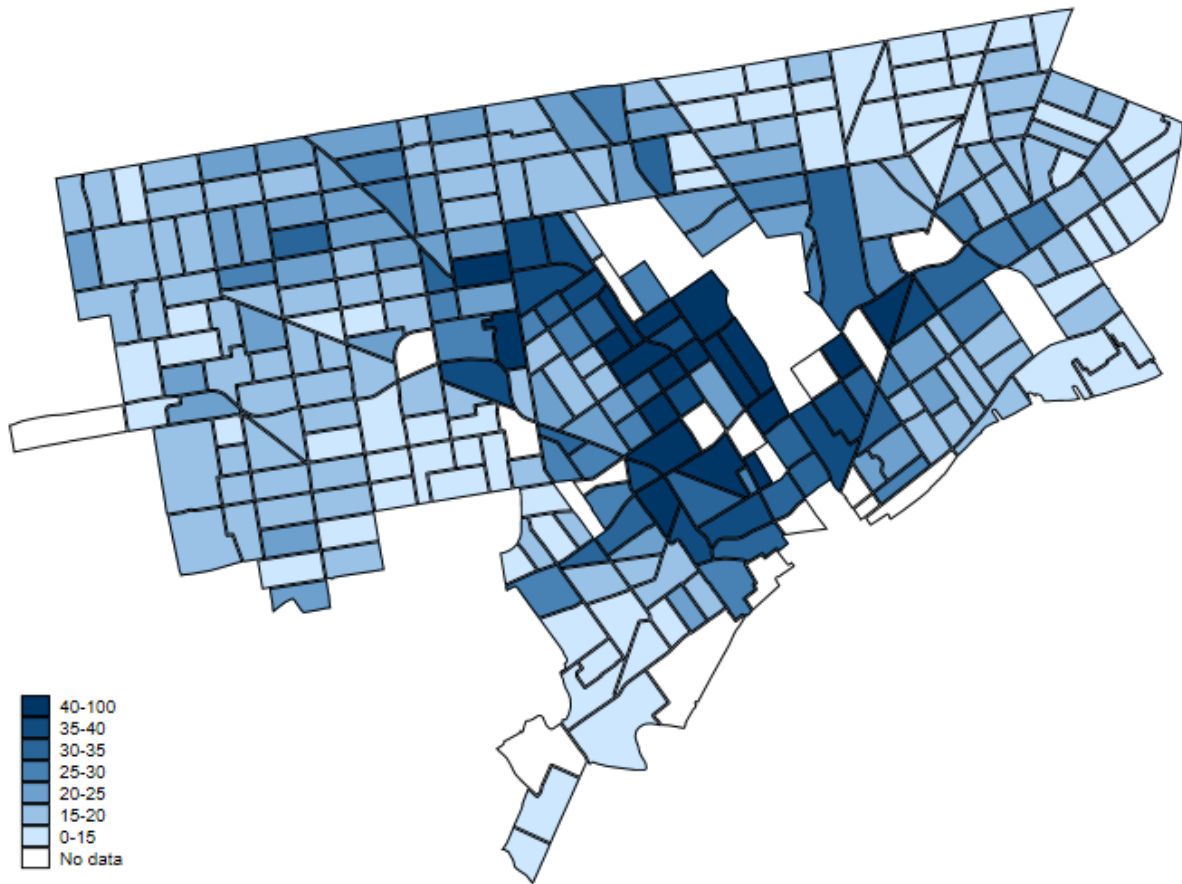


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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

FIGURE A.2

Number of Schools within 10 Minutes of Driving, Sixth Grade

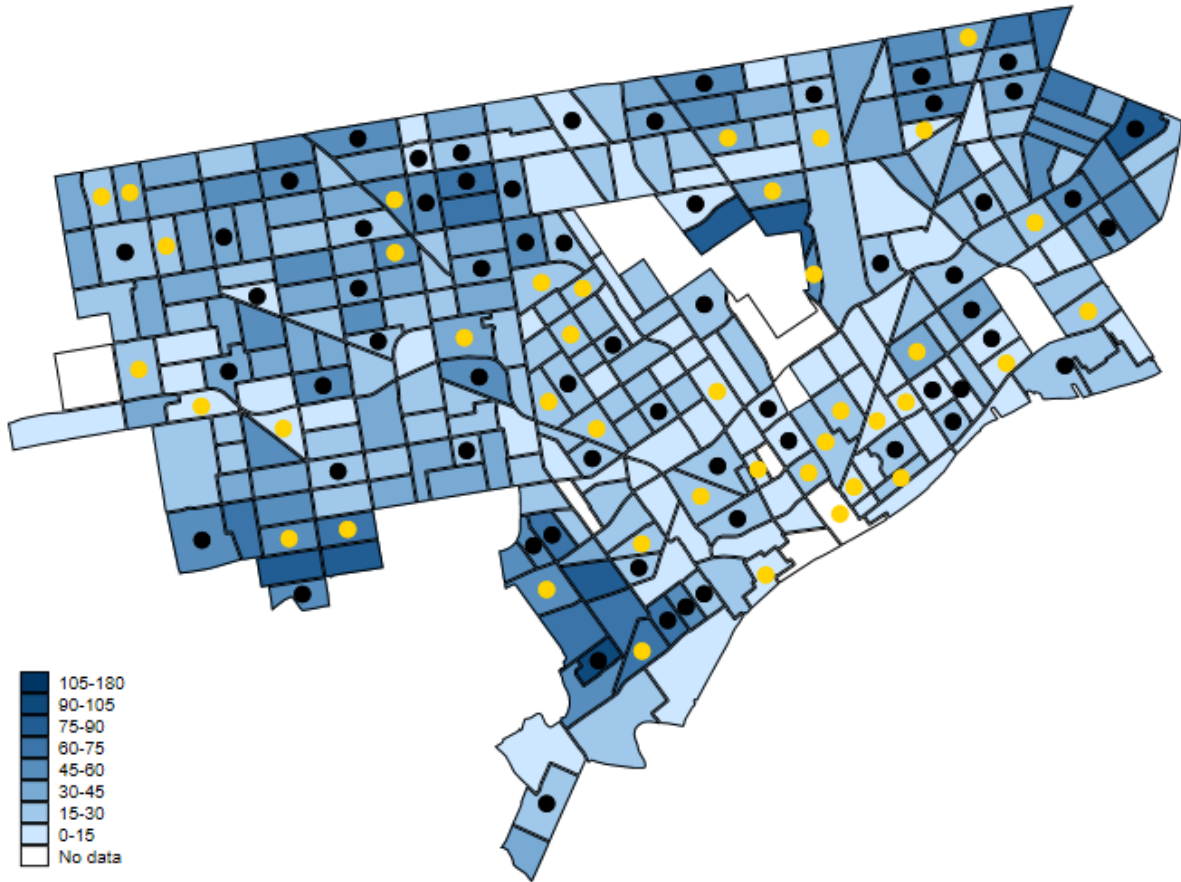


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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

FIGURE A.3

Population Density of Detroit Sixth Graders and Location of DPSCD and Charter Schools Offering Sixth Grade



URBAN INSTITUTE

Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Notes: DPSCD = Detroit Public Schools Community District. DPSCD schools are colored in black, charter schools in yellow. Darker shades of blue indicate census tracts with increasingly larger concentrations of in-grade students. If a tract contained a DPSCD school and a charter school, it is represented as a DPSCD school.

FIGURE A.4

Location of High-Quality Schools Attended by Third Graders



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Source: Education Policy Innovation Collaborative calculations based on data provided by the Michigan Department of Education, the Center for Educational Performance and Information, and the US Census Bureau.

Notes: Yellow dots represent schools in the top quartile of accountability rating, black dots represent schools in the bottom quartile of students chronically absent, and blue dots represent the bottom quartile for student-teacher ratio.

Notes

- ¹ Digest of Education Statistics (2015). Table 206.40. <https://nces.ed.gov/pubs2016/2016014.pdf>.
- ² Children and families in Flint, Michigan, were recently exposed to toxic drinking water after the city switched to a new water source. We do not consider this event to have had an effect on the expansive role of public charter schools.
- ³ Jason Bedrick, “Educational Choice IS Accountability,” *Cato at Liberty* (blog), Cato Institute, March 12, 2014, <https://www.cato.org/blog/educational-choice-accountability>.
- ⁴ Lori Higgins, “Detroit’s Schools Score Worst in the Nation Again, but Vitti Vows That Will Change,” *Detroit Free Press*, April 10, 2018, <https://www.freep.com/story/news/education/2018/04/10/detroit-schools-again-worst-nation-rigorous-national-exam-while-michigan-overall-sees-no-significant/493893002/>.
- ⁵ The unit of analysis in the IFF (2017) report is the school level. Those data do not allow the analysis of student characteristics nor the creation of profiles of different students in the city. The study only includes schools within the boundaries of Detroit. Therefore, it does not compare quality of all available options for students. Because it does not have student-level data, it does not include possible characteristics of students leaving Detroit. Commuting distances in the study are based on only students who attend a DPSCD school. And school supply is determined at the neighborhood level, whereas driving distances allow us to have a more nimble measure of access. We use census blocks and tracts rather than neighborhoods. There may be variance in the access/distance to school within a neighborhood. A smaller unit of analysis allows policymakers to have a more precise geographical target area. IFF (2017) define quality on just the absolute accountability rating. We look at a range of factors that determine a quality school, and we define them relative to other schools in the area.
- ⁶ We exclude adult schools, alternative schools, and schools located in juvenile detention centers. These options do not serve the typical Detroit student. We also exclude virtual schools since students most likely do not travel to school regularly.
- ⁷ The state defined these as “students who have been determined to be eligible for free or reduced-price meals via locally gathered and approved family applications under the National School Lunch program, are in households receiving food (SNAP) or cash (TANF) assistance, are homeless, are migrant, or are in foster care. When any of these conditions are present, a student is considered economically disadvantaged.” Data from “Field Definitions K–12 Researcher Files,” Center for Educational Performance Information.
- ⁸ Although there are some slight differences between black and Hispanic students (in general, Hispanic students tend to travel slightly less), across the preponderance of analyses here, the difference is substantively negligible relative to white students.
- ⁹ In general, geographic patterns for sixth graders are similar to patterns for third graders. Therefore, we do not include them in the main text. See appendix for all maps displaying sixth grade geographic patterns.
- ¹⁰ Erin Einhorn, “New Study Shows Just How Hard It Is to Find a Decent Public School in Detroit—Especially in 10 City Neighborhoods,” *Chalkbeat*, December 14, 2017, <https://www.chalkbeat.org/posts/detroit/2017/12/14/new-study-shows-just-how-hard-it-is-to-find-a-decent-public-school-in-detroit-especially-in-10-city-neighborhoods/>; Kate Zernike, “A Sea of Charter Schools in Detroit Leaves Students Adrift,” *New York Times*, June 28, 2016, <https://www.nytimes.com/2016/06/29/us/for-detroits-children-more-school-choice-but-not-better-schools.html>.
- ¹¹ For figures with schools serving sixth graders, see the appendix.
- ¹² Though we combine all grades in figure 7, the patterns in each grade are similar.

¹³ “2016–17 Michigan School Index System Policy Brief,” Michigan Department of Education, accessed July 23, 2018, https://www.michigan.gov/documents/mde/MI_School_Index_System_Policy_Brief_613866_7.pdf.

¹⁴ For more information on the creation of the index scores, visit <https://www.michigan.gov/mde/>.

¹⁵ “K-12 Data File Layout,” Center for Educational Performance and Information, accessed October 2, 2018, <https://www.mischooldata.org/DistrictSchoolProfiles2/EntitySummary/SchoolDataFile.aspx>.

¹⁶ “Parent Dashboard for School Transparency,” Michigan Department of Education, accessed July 23, 2018, <https://www.mischooldata.org/ParentDashboard>.

¹⁷ If a school was in the highest quartile in multiple quality measures, the assigned quartile was determined by the first category in the following list that the school fell in: (1) chronic absenteeism, (2) accountability rating or ranking, (3) student-teacher ratio, (4) graduation rate. All schools considered high quality by multiple measures were outside of DPSCD limits and therefore not depicted in figures 13 through 15.

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