



GEOGRAPHY, SCHOOL TYPE, AND HIGH STUDENT ATTENDANCE IN DETROIT



AUTHORS

Jeremy Singer

Sarah Winchell Lenhoff

Ben Pogodzinski

Walter Cook

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The Detroit Education Research Partnership is a collaboration between researchers at Wayne State University’s College of Education and a constellation of community partners interested in improving Detroit schools. We orient our work around the pressing policy needs of the Detroit education community, and we seek to inform improvement in the stability and engagement of school experiences for Detroit youth. We believe that education reform in other places has important lessons for our collective work in Detroit, but that any solution for Detroit will have to respond to the unique strengths and needs of our community. Using continuous improvement methods, we work in partnership with schools, community organizations, and policymakers to identify the key problems that impede improvement in Detroit schools. We then collaboratively determine what stakeholders need to know to solve those problems and design research studies to collect, interpret, and disseminate that information to the audiences that need it most. Learn more about our work and provide your input at <https://education.wayne.edu/detroit-education-research-partnership>.

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GEOGRAPHY, SCHOOL TYPE, AND HIGH STUDENT ATTENDANCE IN DETROIT

Detroit has the highest rate of chronic absenteeism of any major city in the U.S., with more than half of students missing 18 or more days (10% of the school year). Still, about one-fifth of the city's students between 2010-11 and 2017-18 can be classified as “high attenders.” These students had an average attendance rate of 99%. Are there particular characteristics and conditions that set these high attendance students apart? This analysis of Detroit's student attendance is a first step toward identifying unique characteristics of students with high attendance rates, which can inform policies to support an increase in student attendance city-wide.

MAJOR FINDINGS

- Detroit's high attenders missed an average of just 2 days a year and performed significantly better on ELA and math standardized tests than non-high attenders, even those missing an average of 9 days a year.
- Nearly 70% of Detroit's high attenders were enrolled in “high attendance schools,” or the top third of schools by attendance rate. Just 8% of high attenders were enrolled in “low attendance schools.”
- Most of Detroit's high attenders were enrolled in “commuter” charter schools downtown and in the Detroit Public Schools Community District's application- or exam-based schools, traveling farther on average than non-high attenders to enroll in school.
- High attenders lived throughout the city but were especially concentrated in Southwest, downtown, and in the center-north, as well as in the northwest and near the border of Hamtramck.
- Hispanic, white or middle eastern/north African (MENA), and Asian high attenders lived closer to school on average than their non-high attendance peers, and went to “neighborhood” rather than “commuter” schools. In contrast, Black high attenders lived farther on average from school than their non-high attendance peers and were more likely to attend “commuter” schools.

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INTRODUCTION

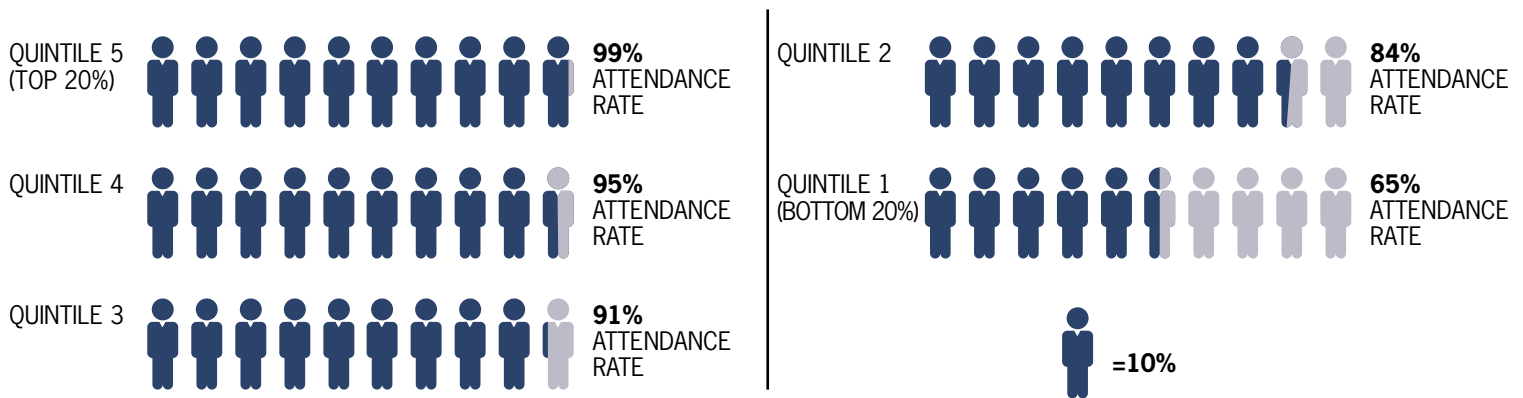
A large body of literature on student attendance identifies the factors associated with particularly low attendance or chronic absence (e.g. Chang & Romero, 2008; Gottfried & Gee, 2017). Rarely, however, has this research focused specifically on factors associated with high attendance. Are there particular characteristics and conditions that set high attendance students apart? This question is particularly important in Detroit, where students have the highest rate of chronic absenteeism of any major city (Balfanz & Chang, 2016). The city-wide attendance rate has consistently averaged below 90% (Lenhoff, Pogodzinski, Singer, & Cook, 2019). Over 55% of students attending school in Detroit in 2017-18 were chronically absent, meaning they missed 10% or more days of school.

A geographic analysis of Detroit's student attendance may identify unique characteristics of students with high attendance rates, which could then inform policies to support an increase in student attendance city-wide. For example, an important determinant of student attendance is whether students have reliable transportation to school (Gottfried, 2017; Fan & Das, 2015). The relationship between transit and student attendance calls attention to how far students live from their schools, the safety of walking routes or bus stops, and whether families have access to a car. Students with very high attendance may differ from other students across these dimensions, and examining differences in commuting patterns could help inform school transportation policies.

Therefore, this policy report examines Detroit's "high attenders"—students in the top quintile of attendance per year—using data on all students who went to school in Detroit from 2010-11 through 2017-18. These students have attendance rates between 95% and 100% (Appendix A), meaning they missed between zero and eight days of school if they were enrolled for the full school year. In comparison, students attending school in Detroit who were not high attenders missed thirty days of school on average. We begin by showing



Figure 1: Average Attendance for Attendance Quintiles, 2010-11 to 2017-18



where high attenders lived and went to school in 2017-18. Then, we describe how high attenders from 2010-11 through 2017-18 differed from other Detroit students based on their distance to school, and how those differences varied between students at low-, medium-, and high-attendance schools. Finally, we look at how the geographic factors for high attenders varied by racial/ethnic group.

Detroit’s high attenders live throughout the city but are especially concentrated in Southwest, downtown, and in the center-north, as well as in the northwest and near the border of Hamtramck. A large number of them go to “commuter” charter schools downtown and to Detroit Public Schools Community District’s (DPSCD) application- or exam-based schools, traveling farther on average than non-high attenders to school. There are, however, important distinctions among high attenders:

- High attenders who go to schools with low average attendance rates live closer to school than their peers, whereas high attenders who go to schools with high average attendance rates live farther from school than their peers.
- Hispanic, white or middle eastern/north African (MENA), and Asian high attenders live closer to school on average than their non-high attendance peers, and go to “neighborhood” rather than “commuter” schools. In



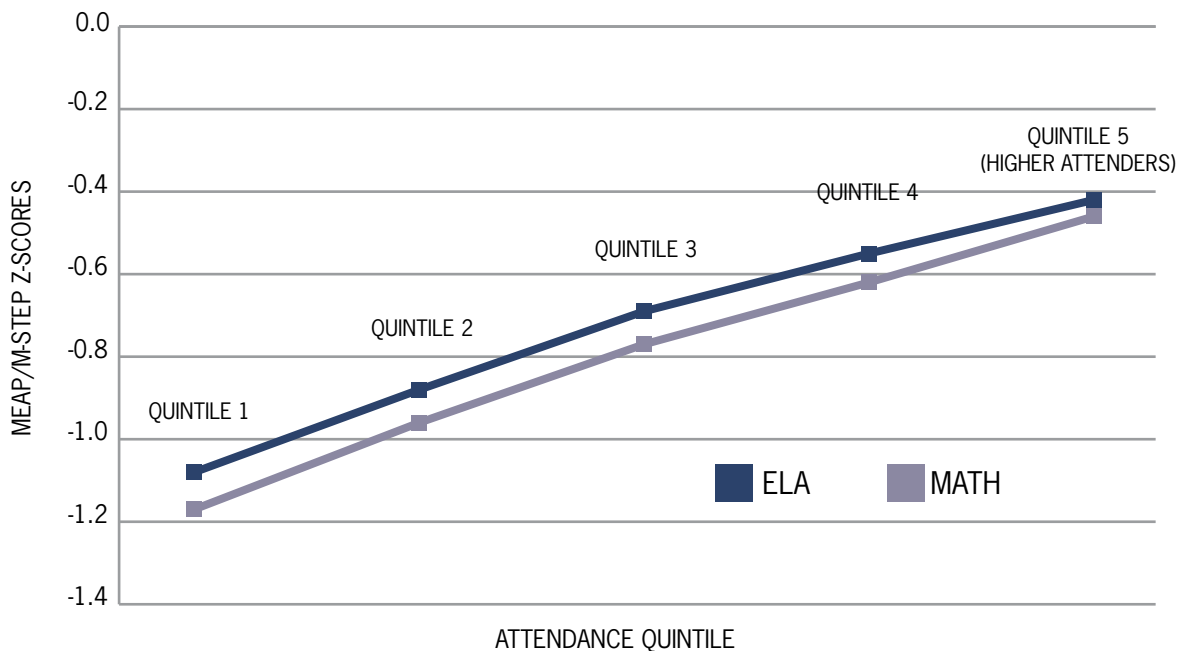
contrast, Black high attenders live farther on average from school than their non-high attendance peers and tend to attend “commuter” schools.

These findings emphasize the need to focus on neighborhood schools and promote community schooling in order to improve attendance, as well as the need to further investigate how transportation access affects attendance in Detroit.

WHO ARE DETROIT’S HIGH ATTENDERS?

In many ways, high attenders in Detroit are defined by the opposite characteristics of chronically absent students (see Lenhoff et al., 2019). Hispanic, white or MENA, and Asian students are overrepresented among high attenders, and Black students are slightly underrepresented. Fewer high attenders are “economically disadvantaged,”¹ and fewer receive special education services. They attend schools with higher student stability, lower discipline rates, and about half as many chronically absent peers (27% versus 53%) on average. They also have less crime, higher home values, and

Figure 2: Math and ELA State Standardized Test Z-Scores by Attendance Quintile, 2010-11 to 2017-18



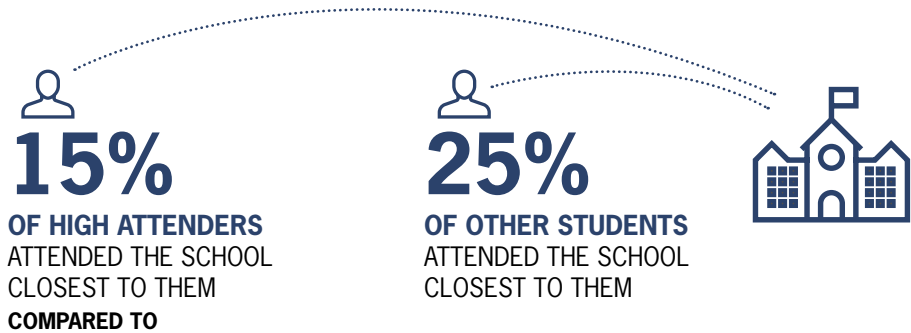
¹The State of Michigan indicates that a student is “economically disadvantaged” if the student meets any of the following criteria: eligible for free or reduced-price meals via the National School Lunch Program, live in households receiving food (SNAP) or cash (TANF) assistance, are homeless, are migrant, or are in foster care.



lower residential vacancy rates on average in the neighborhoods where they live and where they go to school. In other words, high attenders are often students with social advantages in both their residential neighborhoods and their schools, compared to their low attending peers (see Appendix B).

Compared to students in every other quintile of attendance, high attenders also score the best, on average, on the state’s math and ELA standardized tests (Figure 2). This nearly linear relationship between a student’s attendance quintile and math and ELA test scores underscores the well-established association between attendance and academic performance (Allensworth & Easton, 2007; Balfanz & Byrnes, 2012; Gottfried, 2014), even controlling for dimensions of socioeconomic disadvantage. Compared to students who are just one quintile lower in attendance (with an average attendance rate of 94%), high attenders score significantly higher on state assessments.

A distinguishing characteristic of Detroit’s high attenders is that they travel farther to get to school. Based on an “as-the-crow-flies” distance, they live a half-mile farther on average from their school (3 miles vs. 2.5 miles). Importantly, this difference in distance-to-school between high attender and non-high attenders indicates that, on average, high attenders attend schools outside of their “residential neighborhood radius” (see Schlossberg, Greene, Phillips, Johnson, & Parker, 2006; Hamlin, 2017). Further, only 15% of high attenders attended the school closest to them, compared to 25% of other students, suggesting that high attenders were more likely to be travelling farther outside of their neighborhoods for school.



SUGGESTING THAT HIGH ATTENDERS WERE MORE LIKELY TO BE TRAVELLING FARTHER OUTSIDE OF THEIR NEIGHBORHOODS FOR SCHOOL



Therefore, high attenders appear to have a longer commute on average by distance; and if students were using the same mode of transit, then they would appear to have even longer commute times (Scott & Marshall, 2019). These differences suggest that more high attenders may get to school by car, which would enable them to travel farther distances faster and more reliably than public transit, or that the schools they attend outside their neighborhood may provide reliable transportation by school buses.

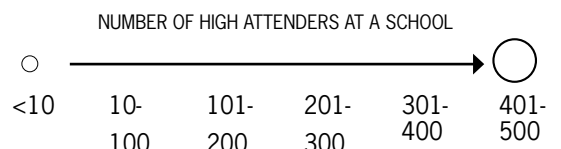
WHERE DO DETROIT'S HIGH ATTENDERS LIVE AND GO TO SCHOOL?

A map of where high attenders lived and went to school in 2017-18 adds important context to the residential geography of high attenders (Figure 3). The highest percentage of high attenders are concentrated in the Southwest area of the city (especially in the Claytown and Springwells neighborhoods), in downtown, and in the center-north neighborhoods of Sherwood Forest and University District. Higher-than-average percentages of high attenders also

Figure 3: Map of High Attenders by Neighborhood and School, 2017-18



This map shows where high attenders lived and went to school in Detroit in the 2017-18 school year. The hues of blue show the percentage of students in each neighborhood that are high attenders at a Detroit school. In darker-blue neighborhoods, a higher number of students were in the top 20% for attendance. The schools on the map are represented by white circles (DPSCD) and diamonds (charter). They are larger based on the number of high attenders in those schools.





live in the northwestern-most neighborhoods, and in neighborhoods near the northern and eastern borders with Hamtramck. These neighborhoods differ in important ways from the average neighborhoods in Detroit. For instance, neighborhoods in Southwest and in the greater downtown area have higher concentrations of public schools available to residents than in other parts of the city.

The map also shows the geographic enrollment patterns of high attenders. Notably, charter schools located in the greater downtown area (e.g. Downtown, Midtown, New Center, and Rivertown) have very high numbers of high attenders. These downtown charters are mostly “commuter” schools to which many high attenders throughout the city are traveling.² Considering that relatively few students live in the greater downtown area (Lenhoff et al., 2019), these downtown “commuter schools” are distinct from schools in other parts of the city with a large number of high attenders. They pull high attenders from across the city, rather than primarily from the area of the city where the school is located. Fewer students going to school in the downtown neighborhoods are economically disadvantaged (77% vs. 88%) than students going to school in other parts of the city, and they travel much farther to get to school on average (5.8 miles vs. 2.2 miles). For DPSCD, most of the district’s schools with a high number of high attenders are in Southwest. The few DPSCD schools in other areas with a high number of high attenders—Bates, FLICS, Cass Tech, and Renaissance—are selective schools with application- or examination-based enrollment. Like the downtown charter schools, these selective DPSCD schools enroll high attenders who live in all parts of the city.



STUDENTS GOING TO SCHOOL DOWNTOWN LIVE

5.8 MILES

FROM SCHOOL ON AVERAGE.



STUDENTS GOING TO SCHOOL IN OTHER PARTS OF THE CITY LIVE

2.2 MILES

FROM SCHOOL ON AVERAGE.



²We use Hamlin’s (2017) definition of “neighborhood” schools as those whose students live on average less than 2.5 miles in grades K-8 or 3.5 miles in grades 9-12 from their schools; and “commuter” schools as those whose students live on average more than 2.5 miles in grades K-8 or 3.5 miles in grades 9-12 from their schools.

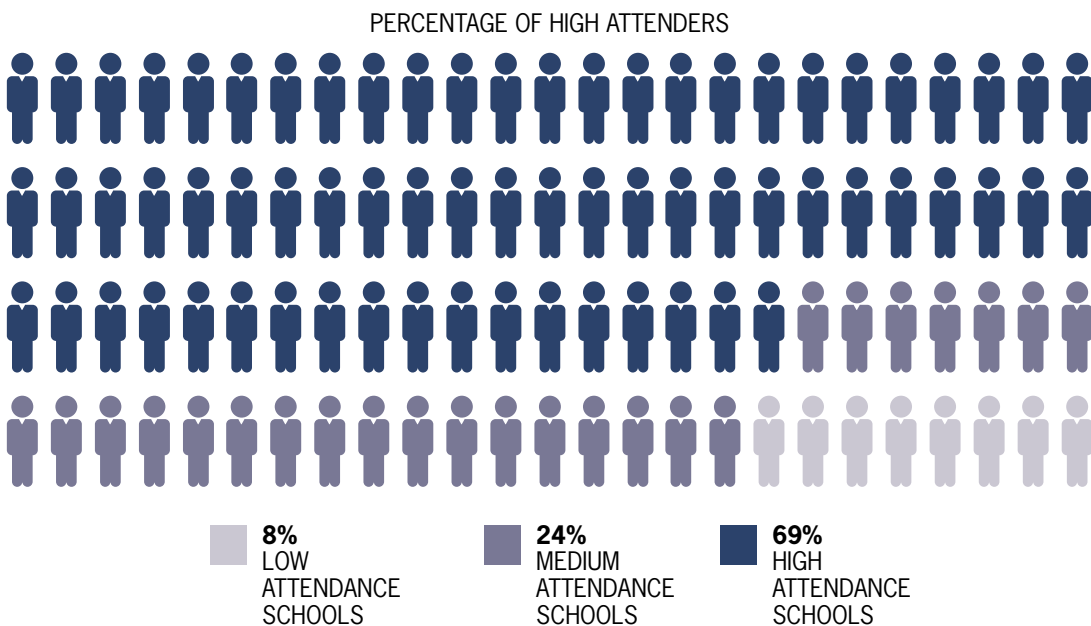


THE GEOGRAPHY OF HIGH ATTENDERS IN LOW-, MEDIUM-, AND HIGH-ATTENDANCE SCHOOLS

On average, high attenders between 2010-11 and 2017-18 went to schools with higher overall attendance rates (92%), whereas non-high attenders went to schools with attendance rates close to the city-wide average (85%). However, not all high attenders went to schools with a high attendance rate. Examining differences between high attenders based on the attendance rates of the schools they attended may add nuance to the relationship between geography and high attendance. Detroit schools can be divided into three categories by their average attendance rates:

- **High-Attendance Schools**—the top third of schools based on attendance, with an average attendance rate of 94% (students missed 11 days on average).
- **Medium-Attendance Schools**—the middle third of schools based on attendance, with an average attendance rate of 88% (students missed 22 days on average).

Figure 4: Percentage of Detroit’s High Attenders in Schools by Attendance Category, 2010-11 to 2017-18





- **Low-Attendance Schools**—the bottom third of schools based on attendance, with an average attendance rate of 76% (students missed 43 days on average).

A large majority (68.7%) of Detroit’s high attenders between 2010-11 and 2017-18 went to high-attendance schools. In contrast, 23.5% of high attenders went to medium-attendance schools, and only 7.8% went to low-attendance schools (Figure 4).

Separating high attenders by high-, medium-, and low-attendance schools shows important differences in distance. High attenders in high-attendance schools lived over one mile farther from school than high attenders in medium-attendance schools or low-attendance schools (Figure 5). Additionally, only 9% of high attenders in high-attendance schools went to their nearest school, compared to 24% of high attenders at medium-attendance schools and 35% at low-attendance schools (Figure 6). Similarly, 43% of high attenders at high-attendance schools were “commuters” (traveling over 2.5 mi for K-8 or 3.5 mi for 9-12 to school), compared to only 27% at medium-

Figure 5: Average Distance to School for High Attenders, by School Attendance Category, 2010-11 to 2017-18

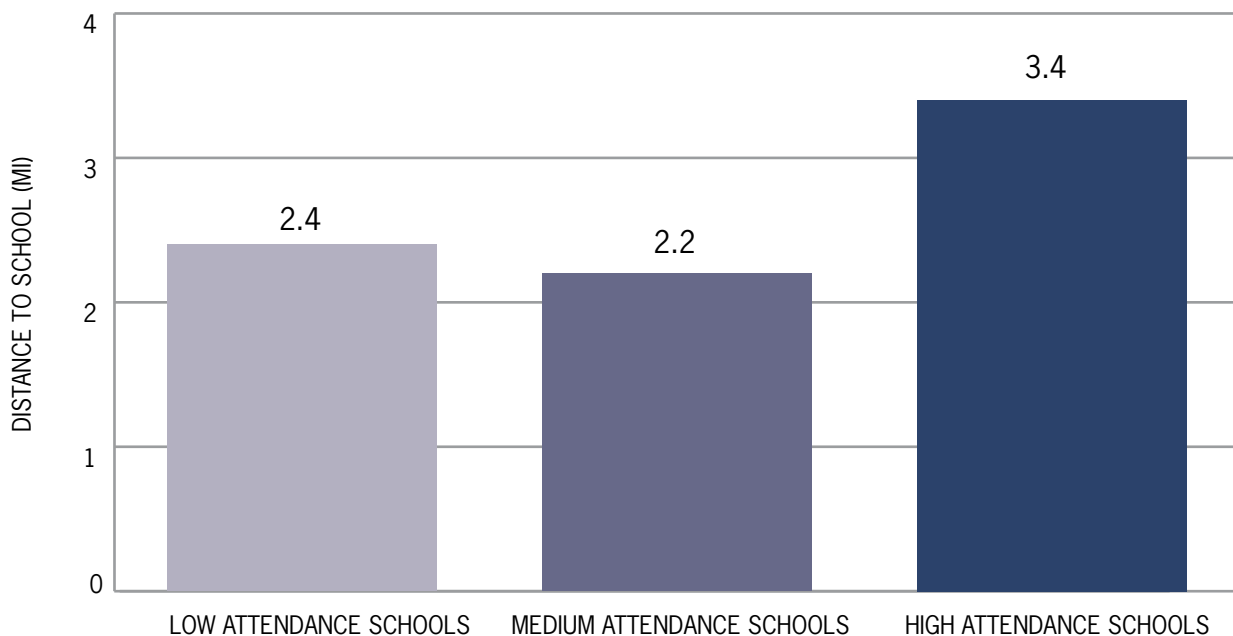
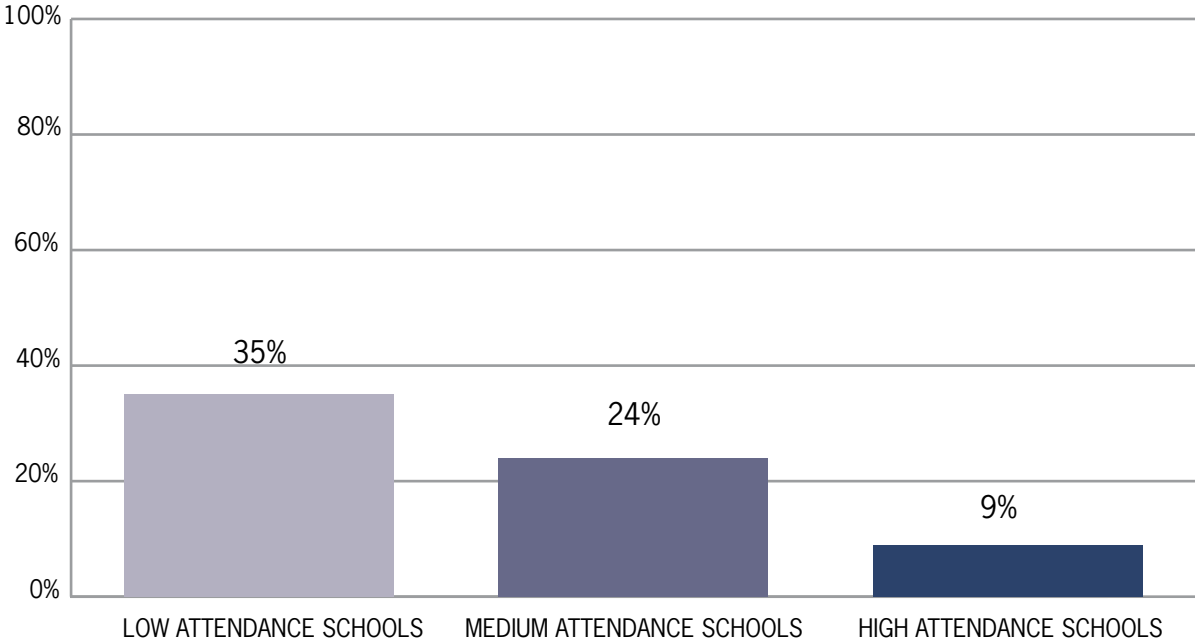




Figure 6: Percentage of High Attenders Enrolled in the Nearest School, by School Attendance Category, 2010-11 to 2017-18



attendance schools and 24% at low-attendance schools. Therefore, high attenders in medium- and low-attendance schools are more likely to be attending schools close to them, rather than traveling far to school like high attenders in high-attendance schools.

In addition, the differences in distance-to-school were greater between students at low-, medium-, and high-attendance schools than they were between high attenders and non-high-attenders within schools in each category. Between 2010-11 and 2017-18, high-attenders at low- and medium-attendance schools traveled approximately the same distance on average to school as their non-high attending peers (2.20 miles vs. 2.18 miles), and the same is true for students at high-attendance schools (3.35 miles vs. 3.31 miles). The between-school difference underscores the fact that high attenders at high-attendance schools are distinct from high attenders at low- and medium-attendance schools. Further, students in high-attendance schools may have even more in common with each other that distinguishes them from students at medium- and low-attendance schools. All students in high attendance schools appear to be able to travel farther for school, suggesting



that they have some relative advantage in terms of access to transit.

The aggregate differences between high attenders and non-high attenders suggests that high attenders traveled farther and tended to be concentrated in schools with other high attenders. But the 30% of high attenders who went to low- and medium-attendance schools do not fit this pattern. Instead, these data suggest that high attenders could be split into two groups: a) high attenders traveling farther to schools with a high concentration of other high attenders, and b) high attenders who travel less far and attend low- and medium-attendance schools. Both groups require further attention to understand the way that individual, school, and environmental factors (e.g. transit, neighborhood safety, and other elements of their commute to school) influence high attenders differently depending on their school context.

RACIAL/ETHNIC DIFFERENCES IN THE GEOGRAPHY OF HIGH ATTENDERS

Disaggregating data on the geography of high attenders by racial/ethnic groups is important because of Detroit's distinct racial/ethnic enclaves. As shown in Appendix C, the city's Hispanic population is heavily concentrated in the southwest part of the city, and Asian residents are largely concentrated on the border with Hamtramck. White and MENA residents have some concentration in areas bordering Hamtramck and Dearborn and reside more in some areas of the city (e.g. downtown, near-east side, center-north) than others. Some of these areas, such as downtown and the University District, are associated with higher home values and higher average family incomes.

This ethnic enclaving tends to be reflected in school demographics. For example, between 2010-11 and 2017-18, Hispanic students going to school in Detroit attended schools with three times as many Hispanic students than the schools attended by non-Hispanic students (75% vs. 24%). Racial stratification was also significant among other groups, with Asian students attending schools with an average of 21% Asian students (compared to 2% for non-Asian students), and white or MENA students attending schools



with an average of 47% white or MENA students (compared to less than 1% for non-white or MENA students). Given this racial/ethnic stratification, and because proportionally more high attenders were Hispanic, white or MENA, or Asian students, an examination of the relationship between geography and high attendance for each group is important. Indeed, the different spatial relationships revealed by this analysis offer insight into how geographic factors mediate racial/ethnic attendance gaps in Detroit.

The positive association between high attendance and distance to school (high attenders travel farther) is only true for Black students (Figure 7). Among Hispanic, white or MENA, and Asian students, high attenders actually lived closer on average to their schools. The differences between high attenders and non-high attenders were also less pronounced: about half a mile on average for Asian and white or MENA students, and only a fifth-mile on average for Hispanic students. Further, Black students—both high attenders and non-high attenders—traveled farther on average for school than Hispanic, white or MENA, and Asian students.

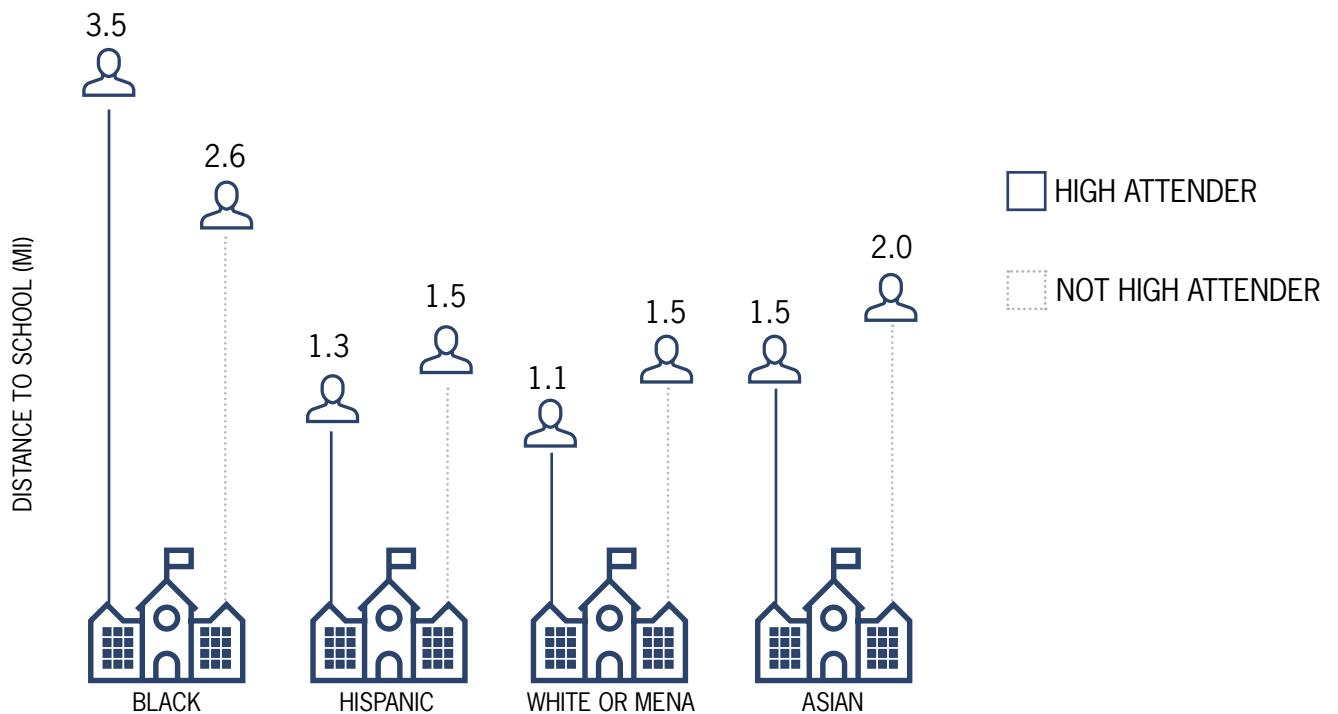
“ The positive association between high attendance and distance to school (high attenders travel farther) is only true for Black students. Among Hispanic, white or MENA, and Asian students, high attenders actually lived closer on average to their schools.

This difference between Black and non-Black high attenders, in the context of where high attenders go to school (see Figure 3), reveals an even clearer picture of high attenders in Detroit. For Hispanic, white or MENA, and Asian students, the relationship between high attendance and distance is what we might expect intuitively: students with the highest attendance lived closer to school. These students were largely enrolled in schools in their neighborhoods, rather than commuting to farther-away schools with a large number of high attenders (Appendix D). Indeed, between 2010-11 and 2017-



18, over 20% of students in Detroit’s “neighborhood” schools were not Black—a percentage that is four times the percentage of non-Black students in “commuter” schools. For Black students (who are the large majority of Detroit’s students), however, high attenders lived farther from the school they attended. These students were mostly traveling to charter schools in the greater downtown area or DPSCD’s application or exam-based schools (Appendix E).

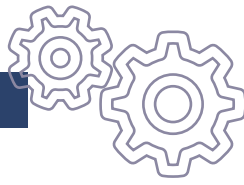
Figure 7: Distance to School of Detroit’s High Attenders vs. Non-High Attenders, 2010-11 to 2017-18



Note: all differences were statistically significantly different at $p < 0.001$



POLICY IMPLICATIONS



The findings presented here point to the importance of focusing on neighborhoods and neighborhood schools to improve attendance. The enrollment and school commute patterns of high attenders (especially Black students who were high attenders) suggest that most of the students with the best attendance in the city from 2010-11 to 2017-18 were also those who were able to choose schools farther away from them. They may have been able to do so based on their socioeconomic status (SES) or resources in their social networks (Bell, 2009). Students who attended schools closer to them, with lower attendance, may have been more reliant on public transit or walking, and were thus even more susceptible to additional barriers to attendance, like bad weather or safety concerns. DPSCD and partner organizations working on chronic absenteeism in the city should consider focusing attendance interventions on neighborhood schools, and particularly schools that serve large percentages of Black students. For example, transportation resources could be deployed in support of students living close to and/or attending their neighborhood schools, whereas transportation is often targeted at those who live further away. Indeed, prior research on attendance shows that students who live close to school benefit from school buses as much as students who live far from school (Gottfried, 2017).

DPSCD can consider revising its school bus transportation policy, by picking up K-8 students or offering bus passes to 9-12 students who live closer than 0.75 miles or 1.5 miles to their zoned school, respectively. Additionally, leaders could expand the eligibility criteria for transportation services to include attendance at one of a set of DPSCD schools within an individual student's neighborhood radius, rather than a single zoned school. The district can also focus its investment in attendance pick-up vans (Higgins, 2019) on neighborhood schools, or strengthen partnerships with community organizations that can lend resources and mobilize volunteers for additional neighborhood-based attendance initiatives (Childs & Grooms, 2018).

As the Community Education Commission seeks to expand its GOAL line



initiative, it should consider identifying neighborhoods and designating morning bus loops where buses can pick students up close to their homes and bring them to school—especially since its morning ridership to school has been much lower than its afternoon ridership to after-school programming (Education Policy Innovation Collaborative, 2019). The city government can continue to engage DPSCD and charter schools to coordinate and develop an improved transportation infrastructure for students (Sattin-Bajaj, 2018).

Detroit can also prioritize the community schools model (Maier, Daniels, Oaks, & Lam, 2017) as a way of connecting community development and school improvement. Strengthening communities in connection with the creation of well-resourced community schools may help replicate some of the community attendance patterns that are associated with very high attendance in Southwest, near Hamtramck, and in the northwestern neighborhoods.

FUTURE RESEARCH



These findings about high attenders point toward two additional lines of inquiry that can help Detroit policymakers and school leaders improve attendance. First, a rigorous, citywide survey of how students in Detroit get to school (e.g. walking, city buses, yellow school buses, or car rides) is necessary to more definitively show how transportation relates to attendance in Detroit. Survey data from a study on school choice in 2014 provided some broad evidence of the rates of students riding a yellow school bus, getting a car ride, walking, or using public transit in Detroit (Jochim, DeArmond, Gross, & Lake, 2014). While the surveys were representative for the city as a whole, they could not be linked to specific students, schools, or neighborhoods in the city. As a consequence, recent policy reports that have investigated student transportation and school commutes have had to make assumptions about transportation mode, distance, and time (e.g. Cowen, Edwards, Sattin-Bajaj, & Cosby, 2018) or continue to use proxies like “as-the-crow-flies” distances (as in this report).

New data from a student transportation survey must include information on



where students live and what schools they attend, and they must allow parents to indicate how frequently their children use each transit option. With information about a student's mode of transit, actual commute distances and commute times can be calculated to determine how central transportation is to school attendance in Detroit. Responses can also be linked to neighborhood conditions (e.g. blight, crime) and transit accessibility (e.g. city bus schedules and routes, whether school buses are provided) to provide a more robust picture of transportation-related barriers to attendance.

“ Given that over 90% of Detroit students are classified as “economically disadvantaged,” the limited nature of the available data may be masking some meaningful SES differences that have an effect on student attendance.

Second, better data on SES should be collected in order to more meaningfully compare SES differences between high attenders and non-high attenders. The data for this study suggests slight SES differences between high attenders and non-high attenders: slightly fewer high attenders are economically disadvantaged, and they live in neighborhoods with slightly higher average family incomes and home values. Given that over 90% of Detroit students are classified as “economically disadvantaged,” the limited nature of the available data may be masking some meaningful SES differences that have an effect on student attendance. For instance, students can qualify as economically disadvantaged with family incomes that range from \$0 to \$47,638 for a family of four, suggesting there may be significant variation in the socioeconomic conditions in which these categorized students live (Michigan Department of Education, 2019). The fact that the large majority of high attenders were traveling father suggests some SES advantages of high attenders, such as access to a car or a better-resourced social network that can help with the school commute. Surveys that collect data on family SES and modes of transportation can directly assess how SES, transit, and attendance are related for Detroit students.



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Appendix A: Average Attendance Rate of Detroit's High Attenders by School Year

School Year	Number of High Attenders (% of Total Students)	Mean	Standard Deviation	Minimum	Maximum
2010-11	19,227 (19.30%)	0.9799	0.0146	0.9536	1.0000
2011-12	20,447 (19.98%)	0.9869	0.0103	0.9694	1.0000
2012-13	19,396 (19.93%)	0.9877	0.0099	0.9708	1.0000
2013-14	18,195 (19.90%)	0.9881	0.0094	0.9707	1.0000
2014-15	17,903 (19.93%)	0.9870	0.0091	0.9708	1.0000
2015-16	17,237 (19.58%)	0.9881	0.0088	0.9716	1.0000
2016-17	17,081 (19.83%)	0.9872	0.0097	0.9718	1.0000
2017-18	17,131 (19.93%)	0.9809	0.0129	0.9598	1.0000



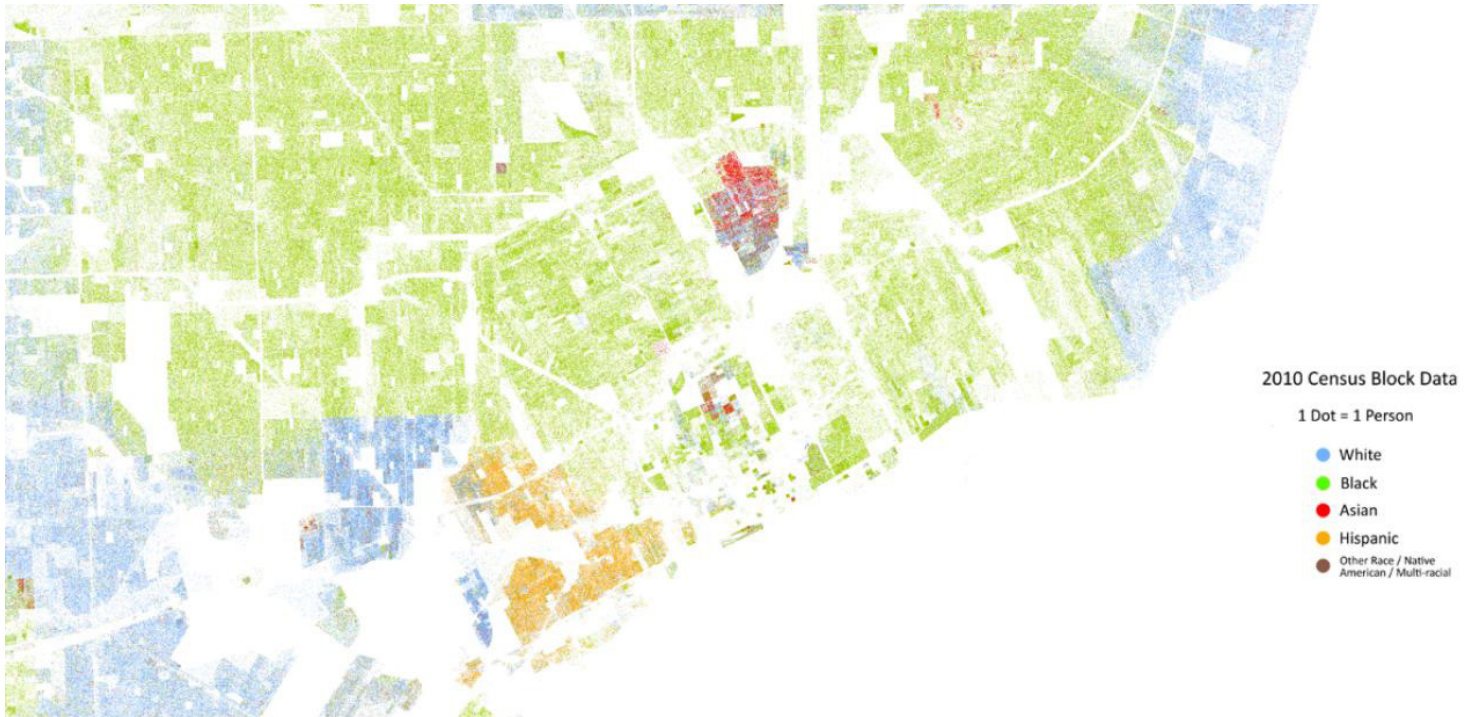
Appendix B: Differences in Student, School, and Neighborhood Characteristics between High Attenders and Non-High Attenders, 2010-11 to 2017-18

	High Attender	Not High Attender	Significance
Student Characteristics			
Female	0.5128	0.4926	***
Special Education	0.0986	0.1587	***
ELL	0.1713	0.096	***
Black	0.7618	0.8603	***
Asian	0.0175	0.0091	***
Hispanic	0.1434	0.0967	***
White or MENA	0.0713	0.0284	***
Other Race	0.0060	0.0055	*
Economically Disadvantaged	0.8304	0.8840	***
Distance to School	2.9938	2.4587	***
Attends Nearest School?	0.1518	0.2579	***
Moved School Within Year	0.0182	0.0738	***
Moved School Between Year	0.1627	0.2454	***
Attendance Rate Last Year	0.9524	0.8588	***
Chronically Absent Last Year	0.1145	0.5308	***
High Attender Last Year	0.5439	0.1198	***
Residential Neighborhood Characteristics			
# Crimes in Residential Census Tract	429.1695	459.7592	***
Asthma Rates in Residential Census Tract	12.6777	12.9874	***
Household Income of Residential Census Tract	31,370	29,479	***
Household Value of Residential Census Tract	60,629	56,372	***
Vacancy Rates of Residential Census Tract	0.2498	0.2708	***
School Characteristics			
% Economically Disadvantaged at school	0.8633	0.8758	***
Average Attendance Rate at school	0.9212	0.8513	***
% Chronically Absent at school	0.2661	0.5279	***
Average Distance to School at school	2.9800	2.4638	***
% Commuter at School	0.3743	0.2971	***
Average ELA MEAP/M-STEP Score at school	-0.5773	-0.7753	***
Average Math MEAP/M-STEP Score at school	-0.6231	-0.8427	***
Number of disciplinary actions per 100 (discipline rate) students at school	18.8117	21.8374	***
Student Stability Rate at school	0.8266	0.7980	***
Teacher Return Rate at school	0.5909	0.6367	***
School Neighborhood Characteristics			
# Crimes in School Census Tract	459.3867	490.2292	***
Household Income of School Census Tract	26,186	27,452	***
Household Value of School Census Tract	60,889	57,678	***
Vacancy Rates of School Census Tract	0.2500	0.2677	***

*p<0.05, **p<0.01, ***p<0.001



Appendix C: Racial Dot Map of Detroit Population, 2010



Source: The Racial Dot Map, Demographics Research Group at the University of Virginia
<https://demographics.virginia.edu/DotMap/index.html>



Appendix D: List of Top 20 Schools with the Highest Percentages of Non-Black High Attenders in Detroit, 2017-18

School Name	Commuter School (average distance 2.5mi or 3.5mi)	Application or Exam- Based School (DPSCD only)	Non-Black High Attenders as a Percentage of Total Students
Bridge Academy West+	No	-	97%
Frontier International Academy+	No	-	78%
Universal Academy+	No	-	74%
Oakland International Academy - Middle+	No	-	61%
Clippert Academy*	No	Yes	43%
Harms Elementary School*	No	No	39%
Oakland International Academy - Elementary+	No	-	39%
Escuela Avancemos+	No	-	39%
Cesar Chavez Middle School+	No	-	37%
Oakland International Academy - K-1	No	-	36%
Cesar Chavez Academy Intermediate+	No	-	35%
Hope of Detroit Academy - Elementary+	No	-	34%
Roberto Clemente Learning Academy*	No	No	33%
Bennett Elementary School*	No	No	32%
Academy of The Americas*	No	Yes	31%
Hope of Detroit Academy - Middle/High+	No	-	31%
Detroit Prep+	Yes	-	31%
Southwest Detroit Community School+	No	-	30%
Cesar Chavez High School+	No	-	28%
Cesar Chavez Academy Elementary+	No	-	26%

*DPSCD school

+Charter school

Appendix E: List of Top 20 Schools with the Highest Percentages of Black High Attenders in Detroit, 2017-18

School Name	Commuter School (average distance 2.5mi or 3.5mi)	Application or Exam-Based School (DPSCD only)	Black High Attenders as a Percentage of Total Students
GEE Edmonson Academy+	No	-	86%
University Preparatory Science and Math - Middle School+	Yes	-	85%
University Preparatory Academy - High School+	Yes	-	80%
University Preparatory Science and Math - High School+	Yes	-	74%
University Preparatory Academy - Middle School+	Yes	-	62%
Henry Ford Academy: School for Creative Studies+	Yes	-	59%
Lincoln-King Academy+	No	-	55%
Weston Preparatory Academy+	Yes	-	52%
Dove Academy of Detroit+	No	-	52%
Detroit Service Learning Academy Campus+	No	-	46%
Detroit Community Schools - High School+	No	-	43%
Cornerstone Jefferson-Douglass Academy+	Yes	-	41%
Marvin L. Winans Academy Middle School+	Yes	-	39%
Detroit Innovation Academy+	No	-	39%
Detroit Edison Public School Academy+	Yes	-	37%
Bates Academy*	Yes	Yes	36%
Foreign Language Immersion and Cultural Studies*	Yes	Yes	34%
University Preparatory Academy - Elementary+	Yes	-	33%
Renaissance High School*	Yes	Yes	33%
Chrysler Elementary School*	Yes	Yes	33%

*DPSCD school

+Charter school

