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Enhancing Diversity in Selective-Admissions Schools: Are Centralized Lotteries and Geographic Preferences Effective?

An Essay for the Learning Curve by Sarah A. Cordes

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Across the country, selective public high schools, which often earn top marks in school rankings, largely fail to reflect the diversity of their communities. Concerns about the low enrollments of Black and Hispanic students in cities such as New York City, Boston, Chicago, and Philadelphia have spurred officials to consider changes to the admissions processes to their most sought-after public high schools.

Proposals to increase selective high school diversity have taken various forms, including guaranteed admission for the top performers in every high school, eliminating admissions exams, and introducing geographic preferences. These policies are controversial, and evidence of their effectiveness in increasing racial diversity is limited.

In fall 2021, the School District of Philadelphia (SDP) announced a proposal to reform its admissions for selective middle and high schools starting in the 2022–23 school year. At the time of the announcement, these schools enrolled significantly higher shares of white and Asian students and lower shares of Black and Hispanic students than the district. For that fall's incoming ninth-grade class, the composition at selective schools was 16 percent white, 55 percent Black, and 12 percent Hispanic, compared with 6.5 percent white, 62 percent Black, and 23 percent Hispanic at all other schools.

The new admissions policy allocated seats to applicants who met schools' admission requirements through a citywide, computerized lottery system and eliminated requirements for interviews or letters of recommendation. Further, the SDP implemented a zip code admissions preference for four schools: Masterman, Academy at Palumbo, Carver High School of Engineering and Science, and Central High School.[1]

[1] Press coverage of the policy change indicated that the zip code preference applied to five schools, but according to the district's website, only four schools were subject to the preference. See "School Selection," School District of Philadelphia, Office of Student Enrollment and Placement, accessed April 15, 2024, https://web.archive.org/web/20211109050309/https://www.philasd.org/studentplacement/services/school-selection/#1635346192733-a0fb655b-4989.

According to the district, the six zip codes given preference had the lowest enrollment rates at these four schools and were not "equitably represented." It was unclear why the district implemented a zip code preference at only these four schools.[2] Although these four schools had a significantly lower share of Black students, on average, than other selective schools and high schools in the city, other special-admissions schools had low Black student enrollment but were not subject to geographic preferences.

As in other districts, changes to the selective school admissions process in Philadelphia sparked widespread debate. But the question remains—how did the change in the admissions policy affect enrollment and composition at selective-admissions schools? The evidence suggests that geographic preferences increased Black and Hispanic enrollment in targeted schools, but the centralized lottery had little to no effect. The increased enrollment of Black students in zip code preference schools was driven primarily by increases in the share of offers to and acceptances from Black students. For Hispanic students, increased enrollment reflects an uptick at all stages of the application process.

How Did the Policy Affect School Enrollment and Demographics?

To answer this question, I use enrollment and demographic information for 2018–19 through 2021–22 from the Common Core of Data, obtained through the Urban Institute's Education Data Portal, in conjunction with enrollment and demographic data from the School District of Philadelphia Open Data for 2022–23. I supplement this information with selective school application data from the School District of Philadelphia Open Data, which contains information on the number of ninth-grade applications, offers, and acceptances for each special-admissions school. Importantly, these data are also disaggregated by race and ethnicity.

I focus my analyses on ninth grade, as these students were directly affected by the policy shift; students in other grades were admitted under the prior policy and therefore unaffected. To compare enrollment and demographic changes from 2021–22 to 2022–23, I analyze three groups: the four special-admissions schools that used a centralized lottery plus a zip code preference, special-admissions schools that used a centralized lottery only, and all other high schools.[3]

Pointing to the popularity of special-admissions schools, 9th-grade enrollment was relatively steady over the past five years, even during the 2020–21 school year, when the district experienced an overall dip in enrollment (figure 1). In zip code preference schools, 9th-grade enrollment increased slightly following the policy change, despite declining enrollment in the district and overall enrollment (i.e., grades 9–12) remaining relatively flat.

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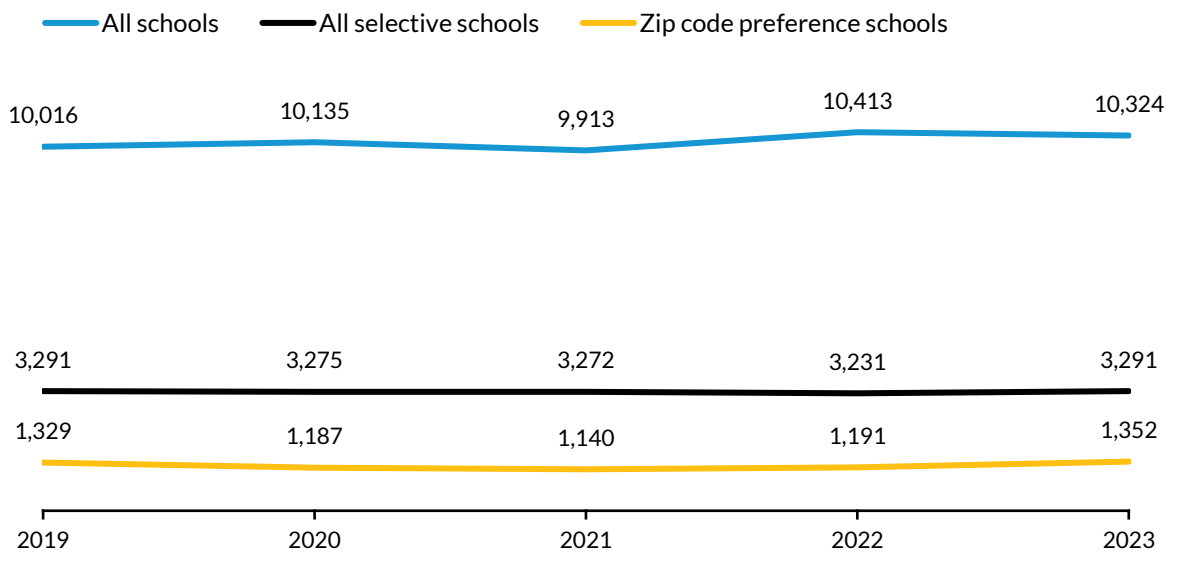
[2] Kristen A. Graham, "District Revising Magnet Rules; Admissions Will Look at Underrepresented Zip Codes, Centralized Lottery," *Philadelphia Inquirer*, October 6, 2021, https://www.inquirer.com/news/philadelphia-district-magnet-schools-criteria-admissions-changes-20211006.html.

[3] Three magnet programs are housed within other schools, and enrollment and application data for these specific programs are unavailable. Therefore, I omit these schools from the analysis.

FIGURE 1

Enrollment at Selective-Admissions Schools Held Steady

Total ninth-grade enrollment



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Source: Author's calculations using data from the Urban Institute's Education Data Portal and School District of Philadelphia Open Data.

Notes: Years indicate the spring semester. The School District of Philadelphia defines selective-admissions schools as those with admissions criteria related to attendance, punctuality, behavior, grades, and standardized test scores. I exclude the three selective-admissions programs housed within other schools from the enrollment totals for selective-admissions schools. Zip code preference schools are Masterman, Academy at Palumbo, Carver High School of Engineering and Science, and Central High School.

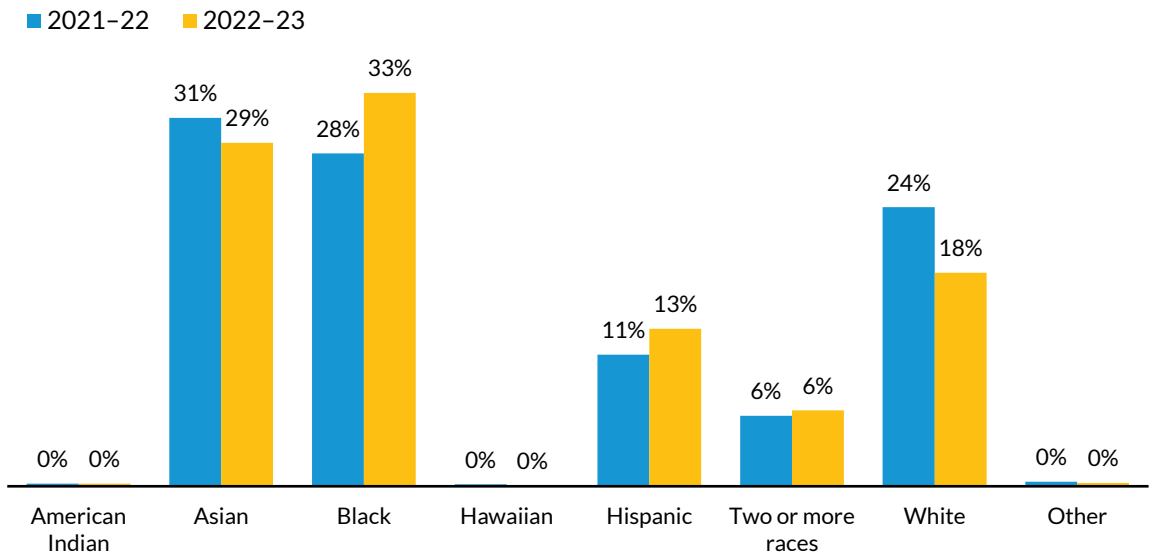
Following the policy change, 9th-grade Black student enrollment in zip code preference schools *increased* from 28 percent to just over 33 percent, and Hispanic enrollment increased from 11 percent to 13 percent (figure 2). The increase in the share of Black students is particularly notable, given that the share of Black 10th-through-12th-graders in zip code preference schools had declined for the past five years (appendix figure A.2). More work needs to be done to understand and address retention patterns among students in these schools.

FIGURE 2

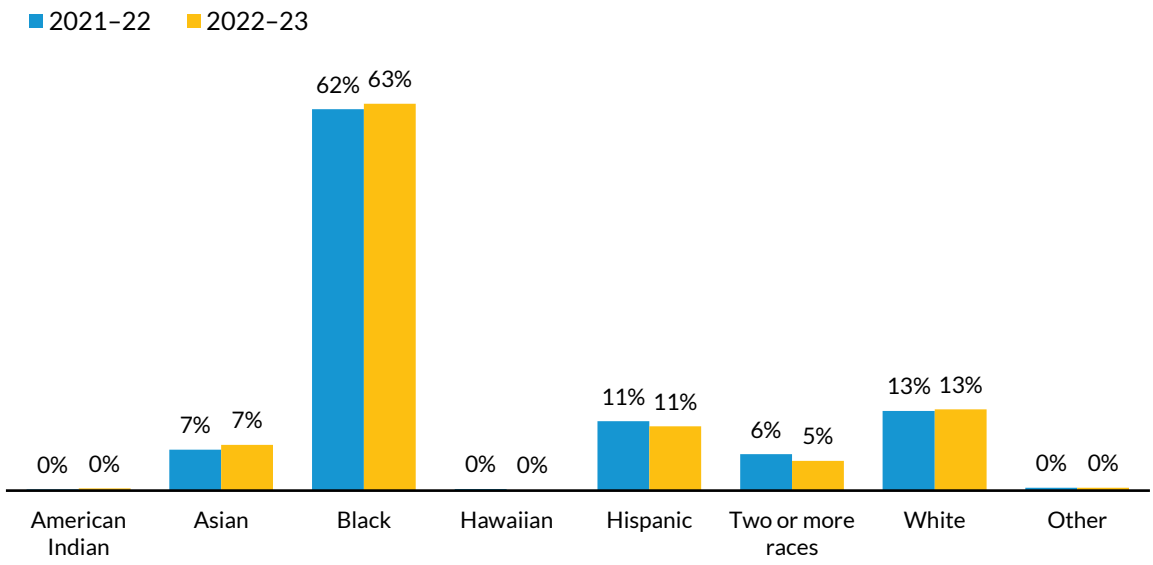
Black and Hispanic Representation Increased at Zip Code Preference Schools

Ninth grade racial and ethnic composition, academic years 2021–22 and 2022–23

Zip code preference



Centralized lottery



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Source: Author's calculations using data from the Urban Institute's Education Data Portal and School District of Philadelphia Open Data.

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Although there was a slight increase in the percentage of Black students at centralized lottery schools, it was only around 1 percentage point. The demographic composition of ninth-graders at all other Philadelphia high schools did not change, indicating that the changes observed in zip code preference schools did not reflect broader trends in the district (appendix figure A.3). More rigorous analyses using a difference-in-differences framework yield similar results (appendix table A.1).

What Drove the Small Increases in Black and Hispanic Enrollment in Zip Code Preference Schools?

The demographics of special admissions are determined through a three-step process: who applies to the schools, who receives an admission offer, and who accepts the admission offer and ultimately enrolls. In practice, any changes to the admissions process would affect only the composition of students who receive an offer. Yet the policy could also increase families' awareness of and perception that they could and would want to receive an offer from these schools, which could make them more likely to apply. This effect would likely be more substantial in the schools offering a zip code preference, as they were mentioned by name in the press.

To understand any larger changes in application trends, I first look at changes in the demographic composition of applications (figure 3). At zip code preference schools, the shares of Black and Hispanic applicants increased by 8 percent and 34 percent, respectively, while the shares of Asian, white, and multiracial applicants all fell. In comparison, at centralized lottery schools, the share of Hispanic applicants increased by 12 percent, but applicants of all other groups decreased slightly. The more dramatic shift in the demographic composition of applications to zip code preference schools compared with centralized lottery schools suggests that at least part of the changes in Black and Hispanic enrollment at zip code preference schools had to do with attracting a different applicant pool.

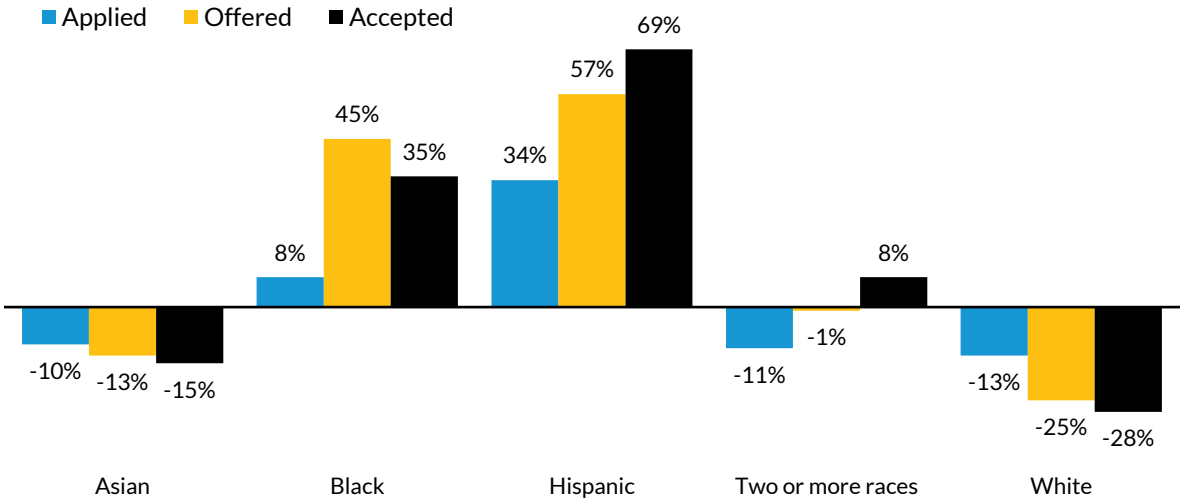
Next, I examine the composition of offers by race and ethnicity—that is, the share of offers made to Black students, Hispanic students, and so on. Here, it is clear that the composition of students who received offers from zip code preference schools changed dramatically—increasing by 45 percent for Black students and 57 percent for Hispanic students. Although changes in the composition of the applicant pool explain part of this increase, the proportionally larger increase in offers made to Black and Hispanic applicants suggests that the new admissions policy also played a role. In schools with a centralized lottery only, the share of offers made to Black students also increased but to a smaller degree (18 percent), and there was no change in the share of offers made to Hispanic students. This finding points to the zip code preference as being more effective than the centralized lottery in shifting the composition of students receiving offers.

FIGURE 3

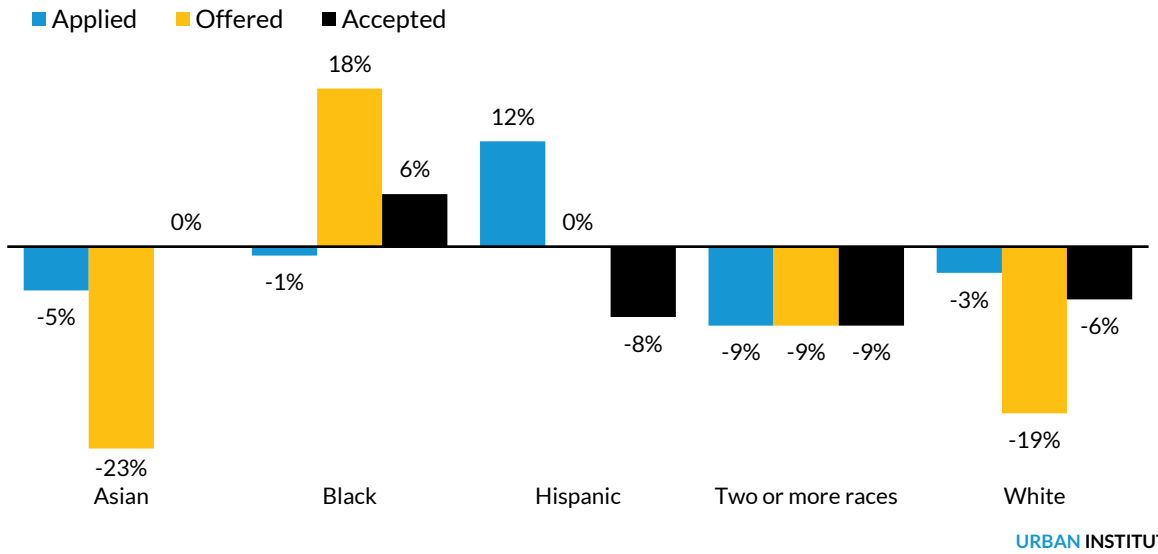
Drivers of Enrollment Changes Differed between Black and Hispanic Students

Percentage changes in applications, offers, and acceptances, by race or ethnicity, academic years 2021–22 and 2022–23

Zip code preference



Centralized lottery only



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Source: Author's calculations using data from the School District of Philadelphia school application data.

Notes: I calculate percentage change in applications as the percentage change in the share of Asian, Black, Hispanic, multiracial, and white applicants from 2022 to 2023. I calculate the percentage change in offers and acceptances similarly. The School District of Philadelphia defines selective-admissions schools those with admissions criteria related to attendance, punctuality, behavior, grades, and standardized test scores. I exclude the three selective-admissions programs housed within other schools from the analysis. Zip code preference schools are Masterman, Academy at Palumbo, Carver High School of Engineering and Science, and Central High School.

Finally, I look at changes in acceptances—that is, what share of students who *accepted* their offer were Black, Hispanic, and so on. For zip code preference schools, the Black or Hispanic share of admitted students who enrolled increased by 35 percent and 69 percent, respectively, while the share who were Asian or white fell by 15 percent and 28 percent. Once again, the changes in schools with a centralized lottery were more modest, with the only increase being among Black students, whose yield rate increased by 6 percent.

Implications for Policymakers

In schools with a zip code preference, the policy appears to have accomplished the district's goal of improving equity and increasing diversity. Both Black and Hispanic enrollment increased, bringing the racial and ethnic composition of these schools closer to that of the school district. But the mechanisms for this demographic shift may have differed for these two groups.

The increase in Black enrollment at zip code preference schools appears to have been driven primarily by changes in the composition of offers and acceptances. Although there was also an increase in the share of Black applicants, it was small in comparison. The increase in Hispanic enrollment, however, likely reflected changes at all points in the process—a relatively large jump in applications and even more significant increases in offers and acceptances. For centralized lottery schools, the changes in offers and acceptances were more modest and mainly concentrated among Black students. These findings suggest that the zip code preference, which changed the composition of offers, combined with the surrounding publicity, was likely an effective tool to increase the representation of Black and Hispanic students in the targeted schools.

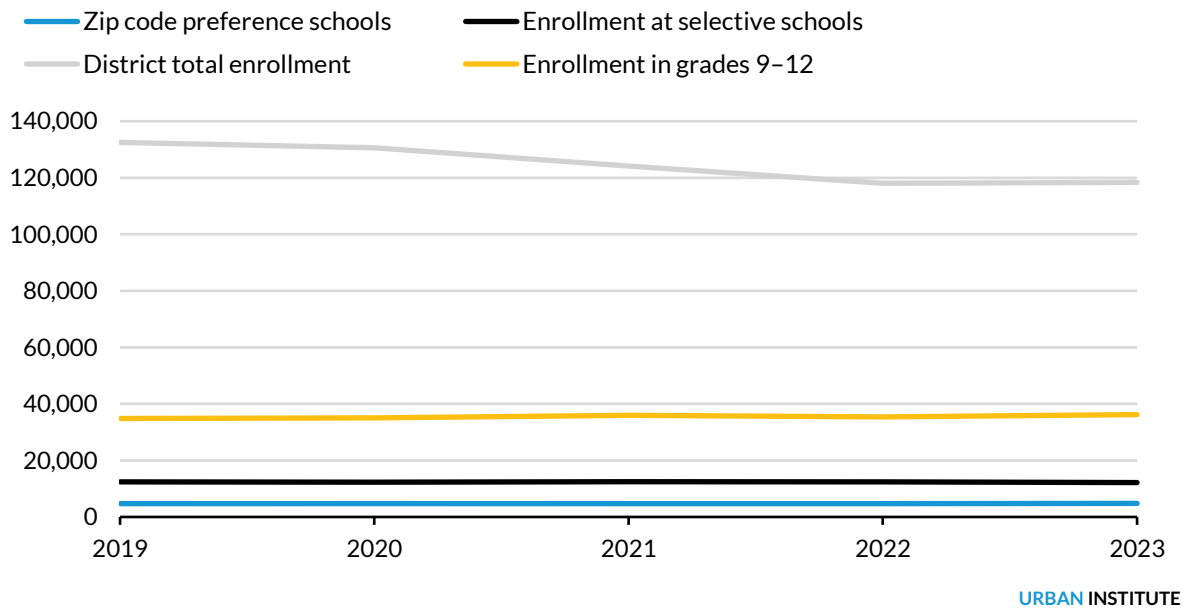
This finding does not necessarily suggest that the district should expand the zip code preference policy to all selective-admissions schools. Even before the policy change, the demographic composition of centralized lottery schools closely resembled that of other high schools in the district, so there was less room, and perhaps less need, for enrollment changes in these schools. Moving forward, districts should consider targeting geographic preference policies toward schools with clear patterns of inequitable access over time rather than administering them as a blanket policy.

Appendix

FIGURE A.1

Ninth-Grade Enrollment Held Steady, and Total Enrollment Declined Slightly

Enrollment trends, academic year 2018–19 to 2022–23



Source: Author's calculations using data from the Urban Institute's Education Data Portal and School District of Philadelphia Open Data.

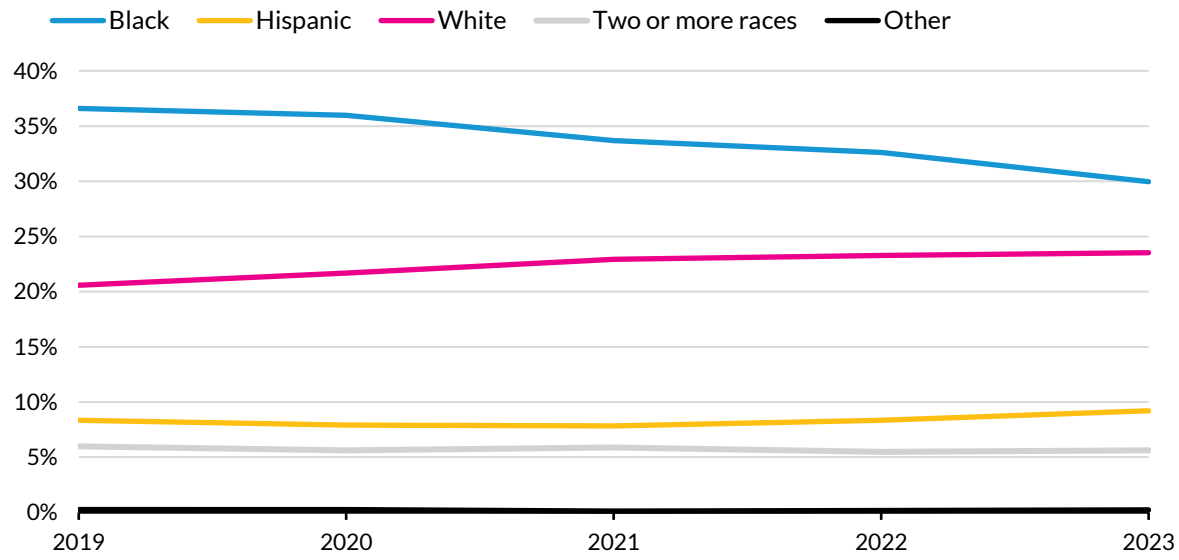
Notes: Years indicate the spring semester. The School District of Philadelphia defines selective-admissions schools as those with admissions criteria related to attendance, punctuality, behavior, grades, and standardized test scores. I exclude the three selective-admissions programs housed within other schools from the enrollment totals for selective-admissions schools. Zip code preference schools are Masterman, Academy at Palumbo, Carver High School of Engineering and Science, and Central High School.

FIGURE A.2

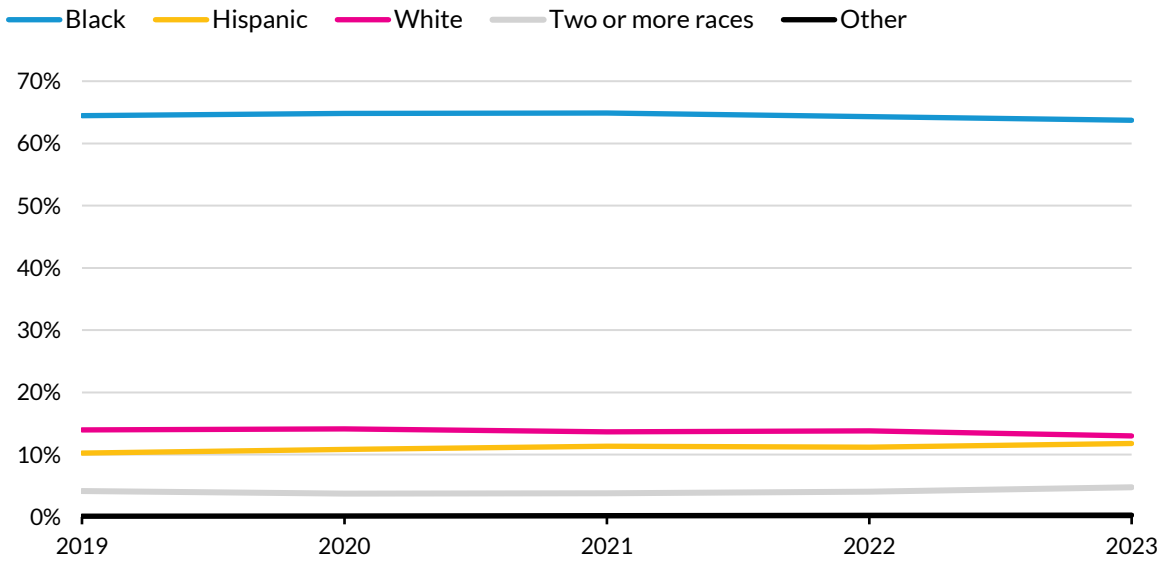
Percentage of Black Students at Zip Code Preference Schools Declined

Trends in racial and ethnic composition from 10th grade to 12th grade, 2018–23

Zip code preference



Centralized lottery



All schools

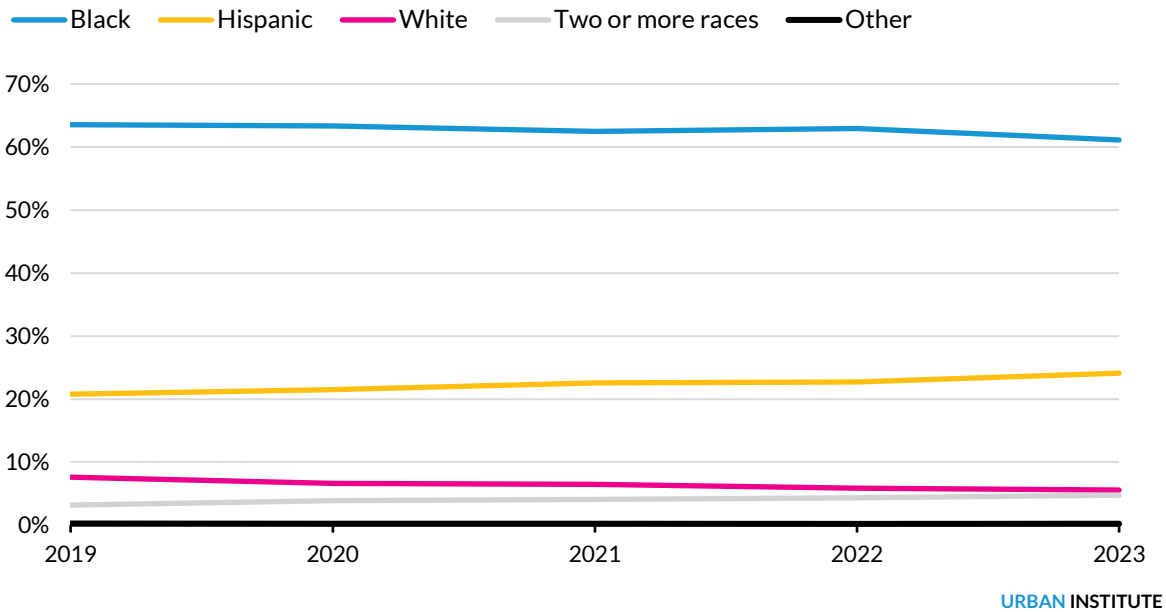


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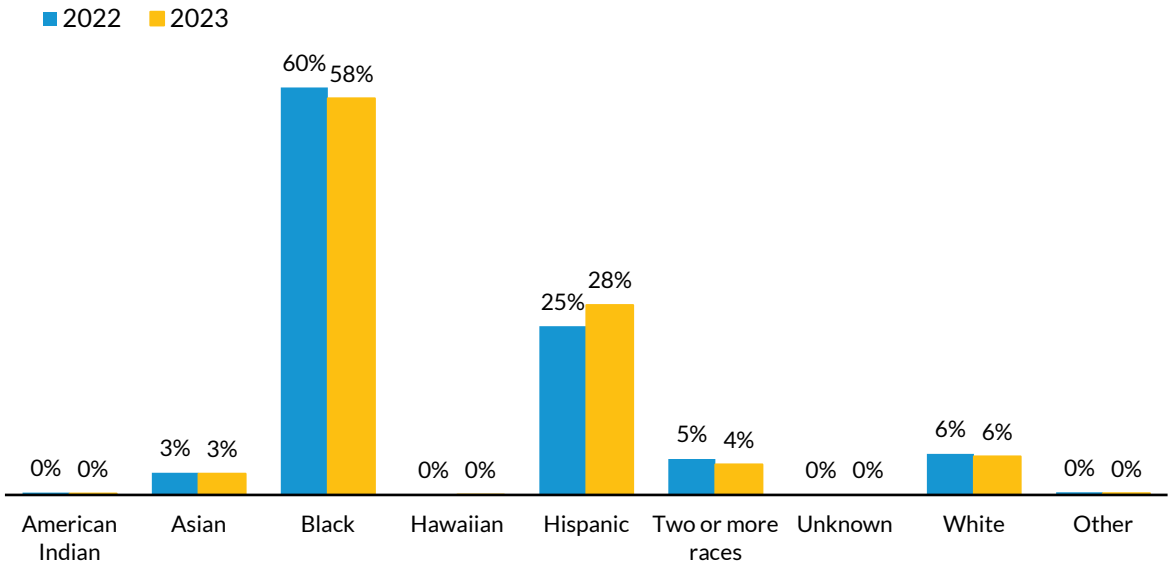
FIGURE A.3

No Change in Ninth-Grade Composition at Other High Schools

Ninth-grade demographics, all other high schools



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Source: Author's calculations using data from the Urban Institute's Education Data Portal and School District of Philadelphia Open Data.

Note: Based on ninth-grade enrollment in high schools, excluding selective-admissions schools.

TABLE A.1

Magnet Policy Change and Student Enrollment by Zip Code Preference, School Fixed Effects, Treated Schools Only, AY 2018–23

	(1)	(2)	(3)	(4)	(5)
	Total enrollment	% Black	% Hispanic	% White	% Asian
9th grade, centralized lottery, AY 2022–23	-4.019	2.636*	-2.443**	-0.521	0.932
	(6.989)	(1.444)	(0.977)	(1.262)	(1.243)
9th grade, zip code preference, AY 2022–23	41.957*	1.516	5.710***	-4.563	-2.083
	(22.730)	(4.656)	(1.382)	(3.318)	(3.184)
Constant	166.933***	56.881***	11.077***	15.670***	11.351***
	(3.106)	(0.651)	(0.358)	(0.458)	(0.377)
Observations	456	456	456	456	456
R^2	0.966	0.971	0.856	0.958	0.945

Source: Urban Institute's Education Data Portal and School District of Philadelphia Open Data.

Notes: AY = academic year. All models include school, grade, and year fixed effects. The reference grade is grade 10. 9th grade, centralized lottery, AY 2022–23 and 9th grade, zip code preference, AY 2022–23 are exclusive indicators. Standard errors are not clustered because of the small number of treated schools. Robust standard errors in parentheses.

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

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