

The State of Open Enrollment in Maricopa County

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Overview

Many families take advantage of district open enrollment policies when choosing a school for their child. However, the lack of data on student location makes it impossible to measure the full impact of this policy. In this paper, I document the open enrollment patterns of approximately 130,000 students in Maricopa County. Specifically, I describe the families most likely to opt out of their neighborhood schools and compare the schools they choose against the schools they avoid. I find that 37% of students enroll in a non-neighborhood school and that parents don't always opt into schools that outperform their neighborhood option.

How many parents opt out of their neighborhood school?

Arizona families can choose from a variety of schooling options, including charters schools, private schools, and traditional public schools. Currently, an unknown number of students enroll in traditional public schools outside their neighborhood by the process of open enrollment. This gap in our knowledge makes it difficult to assess the true impact of school choice on student achievement and school finance.

Even after twenty years of school choice, we still have a lot to learn.

In 1994, Arizona lawmakers instituted open enrollment. This policy allows parents to enroll their children in any public school regardless of district boundaries subject to school capacity constraints. Although formal data on open enrollment do not exist, a large body of circumstantial evidence suggests that parents use open enrollment to shop for schools. For example, newspaper articles have documented the popularity of school choice in Arizona ² and formal research on student movement patterns has found that district open enrollment drives the majority of foot traffic in Arizona's public schools (Powers et al, 2011).

Defining open enrollment:

Where you live \neq Where you go to school

I define open enrollment to be the act of enrolling in a district public school other than one's neighborhood district school. My definition covers all possible flavors of choice: inter-district

¹ In the summer of 2015 Patrick Cizek of the University of Arizona and I decided to study the economics of school choice in Maricopa County. We approached a total of fifteen school districts and the ADE about this study. As of September 2017, nine districts have provided us with usable data, but we continue to collect data on a rolling basis. After putting in much work, Patrick graduated and decided to pursue other interests, but his contribution was critical to getting this project off the ground. I am also grateful to the Arizona Department of Education, my partner districts, and the Center for Student Achievement for their help obtaining the data required to write this paper.

² <http://archive.azcentral.com/community/chandler/articles/20140204arizona-choosing-schools-popular-practice.html>

open enrollment, intra- district open enrollment and “borderless” district schools. However, it is data intensive because it requires information on student location, school level catchment areas, and student enrollment.

Data sources:

I use student location and enrollment data obtained from nine geographically adjacent school districts spanning central and eastern Maricopa County. These districts collectively serve over 130,000 students in the elementary and middle school grade levels (grades KG-8). ³The data are generally unavailable to researchers outside these school districts and subject to strict data sharing agreements. Hence, I refrain from explicitly naming districts. Nevertheless, I provide readers with basic information about their open enrollment rates ⁴ and KG – 8 enrollment counts, which I derived from the Arizona Department of Education’s Oct 1st enrollment counts (2015-2016 school year).

Descriptive statistics (ADE Oct 1st Enrollment Counts)

| District | District Type | District Enrollment | Open Enroll % |
|----------|---------------|---------------------|---------------|
| 1 | Unified | 44,231 | 36% |
| 2 | Unified | 14,949 | 46% |
| 3 | Unified | 28,310 | 29% |
| 4 | Unified | 3,606 | 27% |
| 5 | Elementary | 5,977 | 57% |
| 6 | Elementary | 11,214 | 45% |
| 7 | Elementary | 6,371 | 27% |
| 8 | Elementary | 17,160 | 43% |
| 9 | Elementary | 2,502 | 24% |

There are two key takeaways from the table above. First, open enrollment is very popular. The weighted average of districts open enrollment rate is 37%. Second, open enrollment rates can vary dramatically across districts (from a low of 24% to a high of 57%). In ongoing work, I study whether these numbers extrapolate to other districts and years.

Methodology:

Districts record some, but not all the information required to measure participation in open enrollment. So, I geocode student locations and intersect them with historical school attendance boundary maps which I downloaded off districts’ websites and digitized for geospatial analysis.

³ This represents roughly a third of traditional public-school students (grades KG-8) in Maricopa County

⁴ The open enrollment % column represents the fraction of students in each district that attend a school outside their neighborhood (this includes borderless district schools). The data for this calculation are drawn from multiple administrative sources: the ADE’s Student Accountability Information System (SAIS), and nine anonymous school district’s student directory files. I link the data together using a restricted access crosswalk and adjust for differences in district’s reporting standards (e.g. year-round data versus year end data).

This allows me to compare students' de-facto neighborhood schools with their final school of attendance, and explicitly measure the type and frequency of decisions that parents make.

Descriptive statistics for sample: (Author Calculations)

| Ethnicity | Poverty Status | | Total |
|-----------------|-----------------|-----------------|-------------------|
| | Not Poor | Poor | |
| Native American | 1,040 23.33 | 3,418 76.67 | 4,458 100.00 |
| Asian | 3,994 76.62 | 1,219 23.38 | 5,213 100.00 |
| Black | 2,634 32.48 | 5,476 67.52 | 8,110 100.00 |
| Hispanic | 12,564 23.06 | 41,930 76.94 | 54,494 100.00 |
| Two Races | 2,210 55.33 | 1,784 44.67 | 3,994 100.00 |
| White | 43,544 74.92 | 14,574 25.08 | 58,118 100.00 |
| Total | 65,986 49.10 | 68,401 50.90 | 134,387 100.00 |

Who takes advantage of open enrollment?

37% of students in my study attend a non-neighborhood school. But this statistic masks the role of poverty. Even though poor students⁵ make up a little more than half my total sample, they participate in open enrollment at lower rates than non-poor students (roughly 35% versus 39%). Furthermore, this finding holds true across all ethnicity levels.⁶

⁵ Here, I define poor by a student's eligibility for free or reduced lunch

⁶ I aggregate Native American, Asian, Black, and Two Races into the other category.

How do open enrollment rates vary with poverty?

| Poverty Status | Open Enrollment | | Total |
|----------------|-----------------|-------|--------|
| | No | Yes | |
| Not Poor | 60.85 | 39.15 | 100.00 |
| Poor | 64.69 | 35.31 | 100.00 |
| Total | 62.80 | 37.20 | 100.00 |

How do open enrollment rates vary with poverty and ethnicity?

| Poverty Status | Ethnicity and Open Enrollment | | | | | |
|----------------|-------------------------------|-------|-----------|-------|-----------|-------|
| | — Hispanic — | | — Other — | | — White — | |
| | No | Yes | No | Yes | No | Yes |
| Not Poor | 60.88 | 39.12 | 57.58 | 42.42 | 61.59 | 38.41 |
| Poor | 66.13 | 33.87 | 61.91 | 38.09 | 62.80 | 37.20 |

How far are students willing to travel?

| Open Enrollment | Summary of Distance Traveled to School (Miles) | |
|-----------------|------------------------------------------------|-----------|
| | Mean | Std. Dev. |
| No | 1.30 | 2.35 |
| Yes | 3.71 | 3.90 |
| Total | 2.19 | 3.24 |

The average student in my sample travels 2.19 miles to get to school. But when I disaggregate this number by open enrollment status, I find that open enrollment families travel an average of 3.7 miles to get to school, compared with 1.3 miles for non-open enrolled students. Because districts do not provide transportation for open enrolled students, I hypothesize that geographical constraints and high transportation costs deter some families from participating in open enrollment.

What do parents choose?

In the following table, I compare the performance of students' neighborhood district schools against the performance of students' actual schools of attendance. Note that I do not distinguish between the choices of open-enrollees and homebodies. This distinction is only relevant for the interpretation of the diagonal terms which reflect the choices of students that opt out of their neighborhood school into another school of similar quality, and those that choose to remain in their neighborhood school.

| Letter Grade (Home School) | Ethnicity and Letter Grade (School Attended) | | | | | | | | | | | |
|----------------------------|----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Hispanic | | | | Other | | | | White | | | |
| | A | B | C | D | A | B | C | D | A | B | C | D |
| A | 75.17 | 15.46 | 8.06 | 1.31 | 81.43 | 14.35 | 3.63 | 0.60 | 84.54 | 13.40 | 1.34 | 0.73 |
| B | 14.97 | 61.05 | 21.93 | 2.05 | 25.80 | 54.52 | 18.71 | 0.97 | 39.87 | 51.09 | 7.85 | 1.19 |
| C | 7.65 | 13.75 | 74.46 | 4.14 | 11.97 | 20.02 | 65.27 | 2.73 | 30.51 | 24.90 | 41.40 | 3.19 |
| D | 7.17 | 7.78 | 26.35 | 58.70 | 13.60 | 17.40 | 28.07 | 40.94 | 39.90 | 18.65 | 14.77 | 26.68 |

How to read the table

- 1) 75% of Hispanic students living in the boundary of an A rated school attend an A rated school. But 15% attend a B rated school.
- 2) 40% of White students living in the boundary of a B rated school opt into a A rated school, 51% attend a B rated school, and 8% opt into a C rated school

Conditional on opting out, what do parents choose?

In the following table, I restrict my attention to families that opt out of their neighborhood school. Although I find evidence of students opting into schools that outperform their neighborhood option, I also find many students opting into schools that perform no better, and in some cases worse than their home school. Note that movement patterns differ significantly with students' ethnicity/race. For example, conditional on living in the neighborhood of a B rated school, a White student is more likely to opt into an A rated school than a Hispanic student (66% versus 32%).

| Letter Grade (Home School) | Ethnicity and Letter Grade (School Attended) | | | | | | | | | | | |
|----------------------------|----------------------------------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|
| | Hispanic | | | | Other | | | | White | | | |
| | A | B | C | D | A | B | C | D | A | B | C | D |
| A | 56.45 | 25.51 | 15.66 | 2.37 | 74.58 | 17.33 | 6.85 | 1.24 | 78.78 | 17.10 | 2.09 | 2.03 |
| B | 32.22 | 30.26 | 32.71 | 4.82 | 47.62 | 28.58 | 22.14 | 1.66 | 66.63 | 24.38 | 6.76 | 2.23 |
| C | 21.42 | 29.43 | 39.04 | 10.11 | 26.32 | 37.78 | 31.98 | 3.92 | 49.84 | 33.59 | 12.85 | 3.72 |
| D | 15.32 | 17.30 | 51.77 | 15.62 | 20.96 | 27.47 | 43.61 | 7.95 | 53.11 | 26.01 | 16.85 | 4.03 |

Why don't all parents choose "good" schools?

Choice involves trade-offs. In more technical work, available by request, I use statistical methods to study the choices that families make, controlling for student demographics (e.g. race/ethnicity and poverty), school location and quality, and geographical constraints. I find that families of all races sort into schools based on quality, proximity, and ethnic/racial demographics. Consequently, I conclude that students' experience with school choice are shaped by who they are, where they live, and whether they expect to be part of the racial/ethnic majority or minority at a school.

What can policymakers do?

1) Encourage the Arizona Department of Education to measure the full extent and impact of open enrollment

Policymakers should encourage the ADE to collect information on student location, and fund efforts to measure the extent and impact of school choice on student achievement. Under Arizona Law, the ADE already collects data on student enrollment in districts and charters ⁷. The department should also collect information on open enrollment. This move would be consistent with long standing practices in Colorado, and Minnesota (Carlson et al (2011)).

2) Consider how parents use accountability measures when making school choices

Arizona law mandates that the Department of Education "compile an annual achievement profile for each public school and local education agency." These profiles are supposed to provide parents with academically relevant indicators of school quality and help them "assess the educational impact of a school." But my work suggests that parents don't care exclusively about test scores, and that some families opt into schools that perform no better, and sometimes worse than their neighborhood option. Policymakers should consider how parents use accountability measures when making their public-school choices.

3) Modernize AZ's school finance system

The existing school funding system is outdated. Students are free to travel across district lines, but school funding is restricted by geography (Aportela et al (2016)). Taxpayers can only vote for bonds and overrides that raise funds for their local neighborhood school district. This creates a conflict of interest, because the parents

⁷ Charter schools represent a distinct alternative to district open enrollment. Future researchers might want to consider both sectors simultaneously. However, this is currently beyond the scope of our data.

eligible to raise funding for a school district are not necessarily the parents served by that school district. Policymakers should update Arizona's school finance system to reflect the realities of school choice.

Sources:

- 1) Carlson, Deven, et al. "The Determinants of Interdistrict Open Enrollment Flows: Evidence From Two States." *Educational Evaluation and Policy Analysis*, vol. 33, no. 1, 2011, pp. 76–94. *JSTOR*, JSTOR, www.jstor.org/stable/41238539.
- 2) Powers, J.M., Topper, A., Mazza, B., Silver, M. Anderson, J. (2011). Patterns of student mobility in Metropolitan Phoenix. *Policy Points* (3) 4.
- 3) Aportela, A., Garcia, D., Kerr, I. (2016) *The Distance Between Desk and Home: The Policy and Finance Implications of School Choice Policies*