

Arizona ESA Program



A program administered by The Arizona Department of Education that is funded by state tax dollars to provide educational options for qualified Arizona students.

Motivation

Prop 305: Vouchers still mostly go to students leaving wealthier, higher-performing districts

“Arizona students who use public money to go to private schools are still disproportionately leaving wealthier and higher-performing school districts, an *Arizona Republic* analysis has found.”

<https://www.azcentral.com/story/news/local/arizona-education/2018/10/25/voucher-students-leave-high-performing-schools-private-schools/1734678002/>

Program Details

- Started in 2011 and has been expanded multiple times since
- An estimated 22% of students statewide are eligible
- The program is primarily used by special needs students
- The average value of each scholarship is projected at \$14,185 for the 2019-2020 school year (approximately 177% of the per-student spending in public schools)
- For students without special needs the scholarship is typically \$5200-\$6200
- Scholarships provide 90% of the amount the school would've spent on the student

Who Qualifies for the Program

- preschool student with a disability
- K-12 student with a disability
- student with an active duty military parent
- student with a military parent killed in the line of duty
- student with a parent who is legally blind, deaf or hard of hearing
- Student that is a sibling of a current or previous recipient of an ESA scholarship
- Student who was a Ward of Court
- Student was a previous ESA recipient
- Student resides within a native american reservation
- Student that attends a D or F rated school

Participants by Qualification

FY2019	<u>ESA Participation</u>	
	Disability	3,732
	Active Duty or Fallen Military Parent	813
	Sibling	627
	Native American Reservation	408
	From Failing Public School	399
	Foster Care Child	359
	Prior Participant	85
	Total	6,423

Each student is only counted once, even if they qualify for more than one thing

Question

Does district wealth impact ESA Participation?

Challenges:

- Potential differences in those qualified students from wealthy districts and poor districts (ex: knowledge of the program)
- Unobserved characteristics about nearby private schools (ex: private schools in wealthy areas could be more desirable and encourage program participation)
- Differences in the ability to pay for remaining tuition costs

Data

A	B	C	D	E	F	G	H	I
School District or Charter Holder	Percent DF Schools	Poverty Rate	Special Ed Population	Students in District	Spending Per Pupil	Total Value of ESA Scholarships	Students using ESA to leave district for private school	Average Scholarship
Agua Fria Union High School District	0	0.11	0.1	7838	16247	445380.47	18	24743.36
Ajo Unified District	0	0.22	0.08	421	9433	7252.13	1	7252.13
Alhambra Elementary District	0.111111111	0.38	0.1	11936	9031	291908.38	28	10425.3
Altar Valley Elementary District	0	0.27	0.13	608	11701	33164.4	2	16582.2
Amphitheater Unified District	0	0.17	0.17	13310	9758	967551.27	81	11945.08
Apache Junction Unified District	0.6	0.18	0.18	3496	8739	432072.17	24	18003.01
Avondale Elementary District	0	0.2	0.12	5254	8899	484255.91	48	10088.66
Baboquivari Unified School District #40	0.666666667	0.43	-	968	17109	19951.82	3	6650.61
Balsz Elementary District	0.25	0.33	0.12	2201	11300	311342.76	18	17296.82
Beaver Creek Elementary District	1	0.12	0.16	280	9738	10258.38	2	5129.19
Benson Unified School District	0	0.26	0.15	1264	8927	11981.84	2	5990.92
Bisbee Unified District	0	0.26	0.13	716	11037	13482.52	4	3370.63
Blue Elementary District	-	-	-	10	17192	4156.12	1	4156.12
Blue Ridge Unified School District No. 32	0	0.23	0.11	2094	13476	187135.77	14	13366.84
Buckeye Elementary District	0.5	0.17	0.14	4788	9257	319077.03	27	11817.67
Buckeye Union High School District	0	0.13	0.12	4163	10523	116801.98	8	14600.25
Bullhead City School District	0.4	0.31	0.13	2590	7974	27543.36	1	27543.36
Camp Verde Unified District	0.25	0.21	0.13	1475	8570	107566.5	8	13445.81
Cartwright Elementary District	0.25	0.35	0.1	16434	8918	304656.29	18	16925.35
Casa Grande Elementary District	0.416666667	0.18	0.13	6525	11901	155270.54	20	7763.53
Casa Grande Union High School District	0	0.17	0.14	3567	9305	33112.49	5	6622.5
Catalina Foothills Unified District	0	0.06	0.08	5098	9514	511605.68	50	10232.11
Cave Creek Unified District	0	0.07	0.12	5263	8759	804479.56	37	21742.69
Chandler Unified District #80	0	0.09	0.11	44256	9075	4262690.24	228	18696.01

Approach

We will estimate:

$$Y = B_0 + B_1 \text{Need} + B_2 \text{Rich} + B_3 \text{Need} \text{Rich}$$

Y = District ESA Participation Rate

Need = Proportion of Schools rated D or F in the District

Rich =

- 1 if district poverty rate \leq median district poverty rate
- 0 if district poverty rate $>$ median district poverty rate

Approach

Hypotheses to Consider:

1. Effect of school rating (Need) on ESA participation is the same for students from wealthy (Rich = 1) and poor (Rich = 0) districts.
2. ESA Participation Rates are the same for wealthy and poor district students with the same school ratings.

Model Summary

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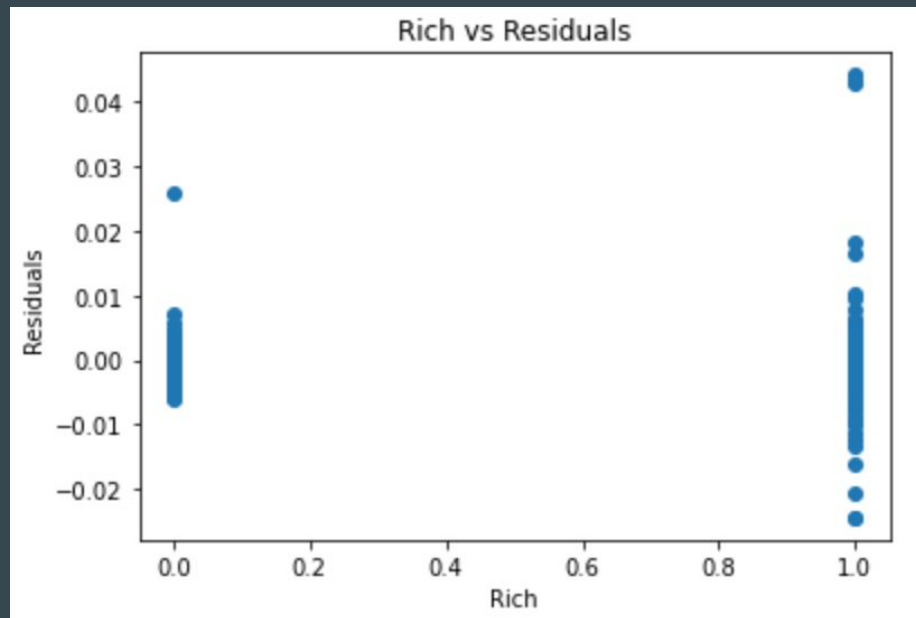
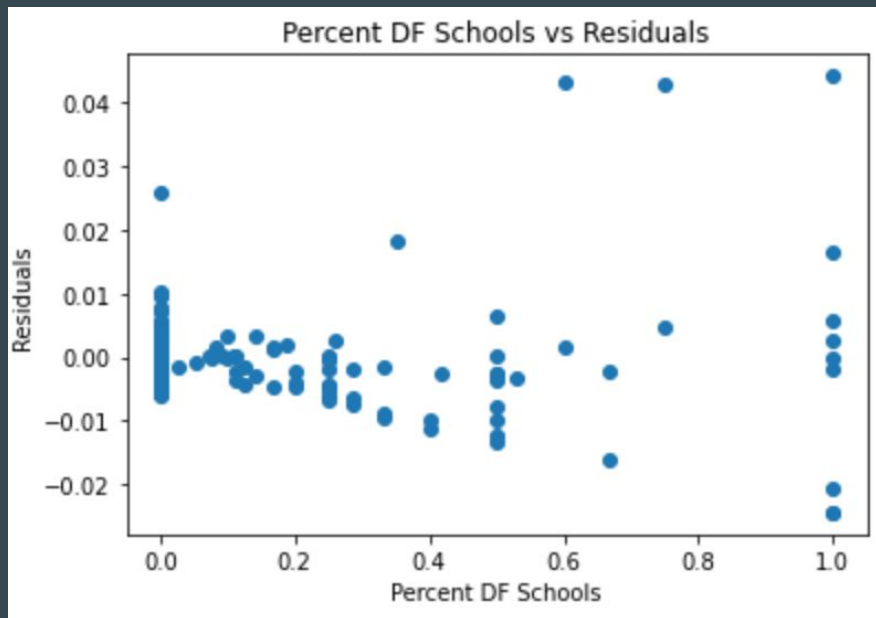
                                OLS Regression Results
=====
Dep. Variable:          ESA_Part_Rate      R-squared:                0.274
Model:                  OLS                Adj. R-squared:           0.258
Method:                 Least Squares      F-statistic:             3.577
Date:                   Sun, 25 Oct 2020    Prob (F-statistic):       0.0157
Time:                   22:16:18           Log-Likelihood:          461.69
No. Observations:       140                AIC:                    -915.4
Df Residuals:           136                BIC:                    -903.6
Df Model:               3
Covariance Type:        HC3
=====
                                coef      std err          z      P>|z|      [ 0.025      0.975 ]
-----
const                   0.0063      0.001      9.986      0.000      0.005      0.008
Proportion DF Schools  -0.0019      0.002     -1.189      0.234     -0.005      0.001
Rich                   -0.0046      0.001     -3.184      0.001     -0.007     -0.002
RichDF                 0.0270      0.009      2.903      0.004      0.009      0.045
=====
Omnibus:                93.696      Durbin-Watson:           1.797
Prob(Omnibus):           0.000      Jarque-Bera (JB):        810.596
Skew:                    2.235      Prob(JB):                9.58e-177
Kurtosis:               13.908      Cond. No.                 10.5
=====

Warnings:
[1] Standard Errors are heteroscedasticity robust (HC3)

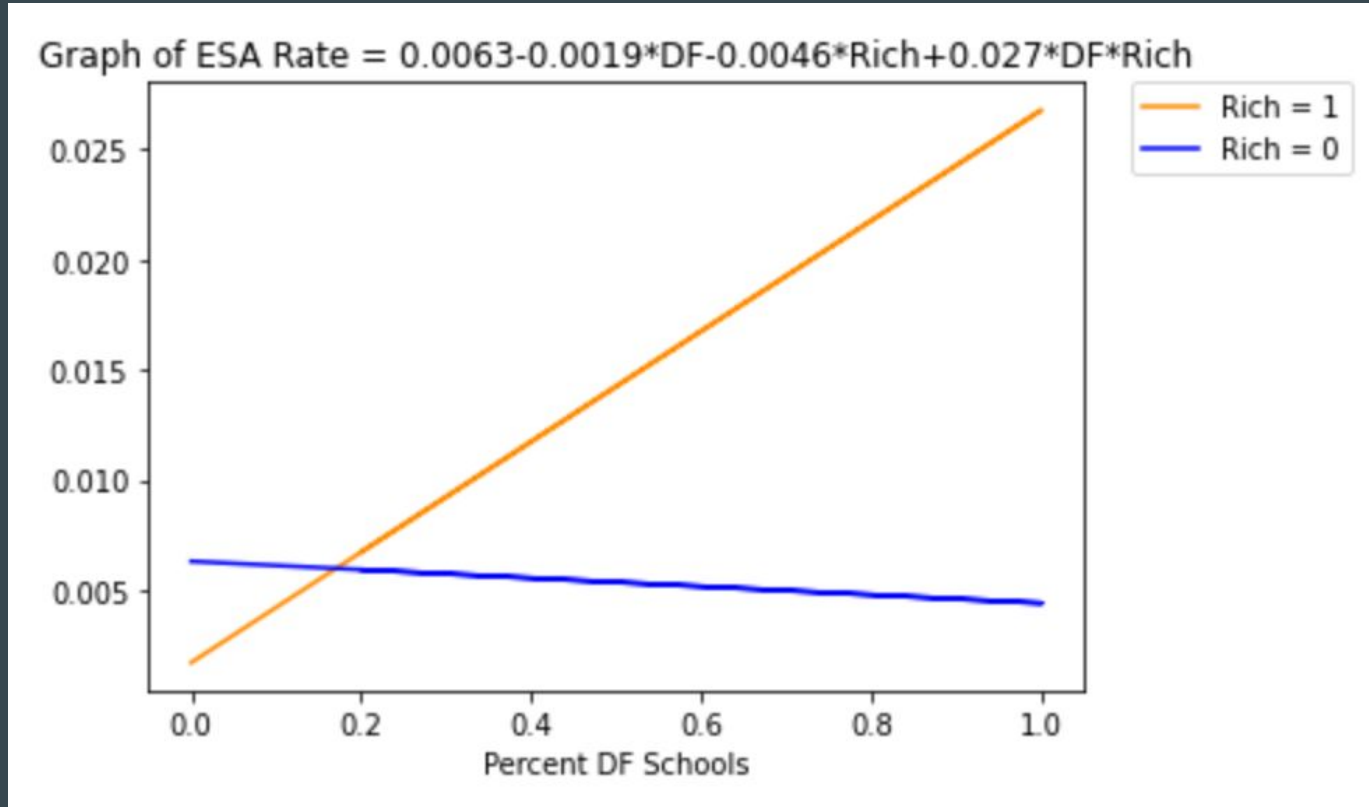
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-- Estimate on Proportion DF Schools not statistically different from 0 --

Residual Plots



Plot of Estimating Equation



Findings

Districts with Higher Poverty Rates

- Districts with higher poverty rates have higher initial ESA participation rates
- Increases in need have no impact on participation

Districts with Lower Poverty Rates

- Districts with lower poverty rates have lower initial ESA participation rates
- Increases in need increase participation

Did the Policy Work?

YES...

For students from wealthier districts (since increases in need increased participation)

NO...

For students from poorer districts (since increases in need have no effect on participation)

Causality

Average Causal Effect when Rich = 1 of a .10 increase in DF:

$$E[Y_i | \text{Rich} = 1, \text{DF} = .20] - E[Y_i | \text{Rich} = 1, \text{DF} = .10]$$

$$= E[f_i(.20) - f_i(.10) | \text{Rich} = 1] = 0.00251$$

=> We would expect a 0.25% increase in ESA participation in wealthier districts when Prop DF Schools increases by .10

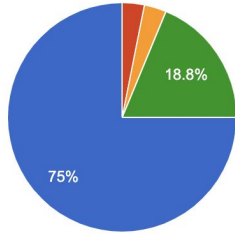
Survey Results (or lack thereof)

- Underestimated the amount of time it would take to get results (wanted around 200 responses and ran it for a little over a month)
- Got 32 Responses but 8 weren't from parents with a child going to a public school

Do you have at least one child currently attending an Arizona public school? (Answer yes if they attend a charter school)



32 responses

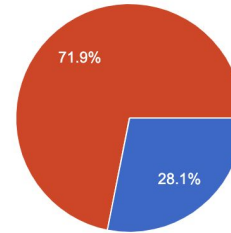


- Yes
- No, they attend a private school
- No, they are homeschooled
- None of the above

Are you aware of the Arizona Empowerment Scholarship Account (ESA) program?



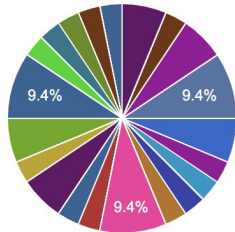
32 responses



- Yes
- No

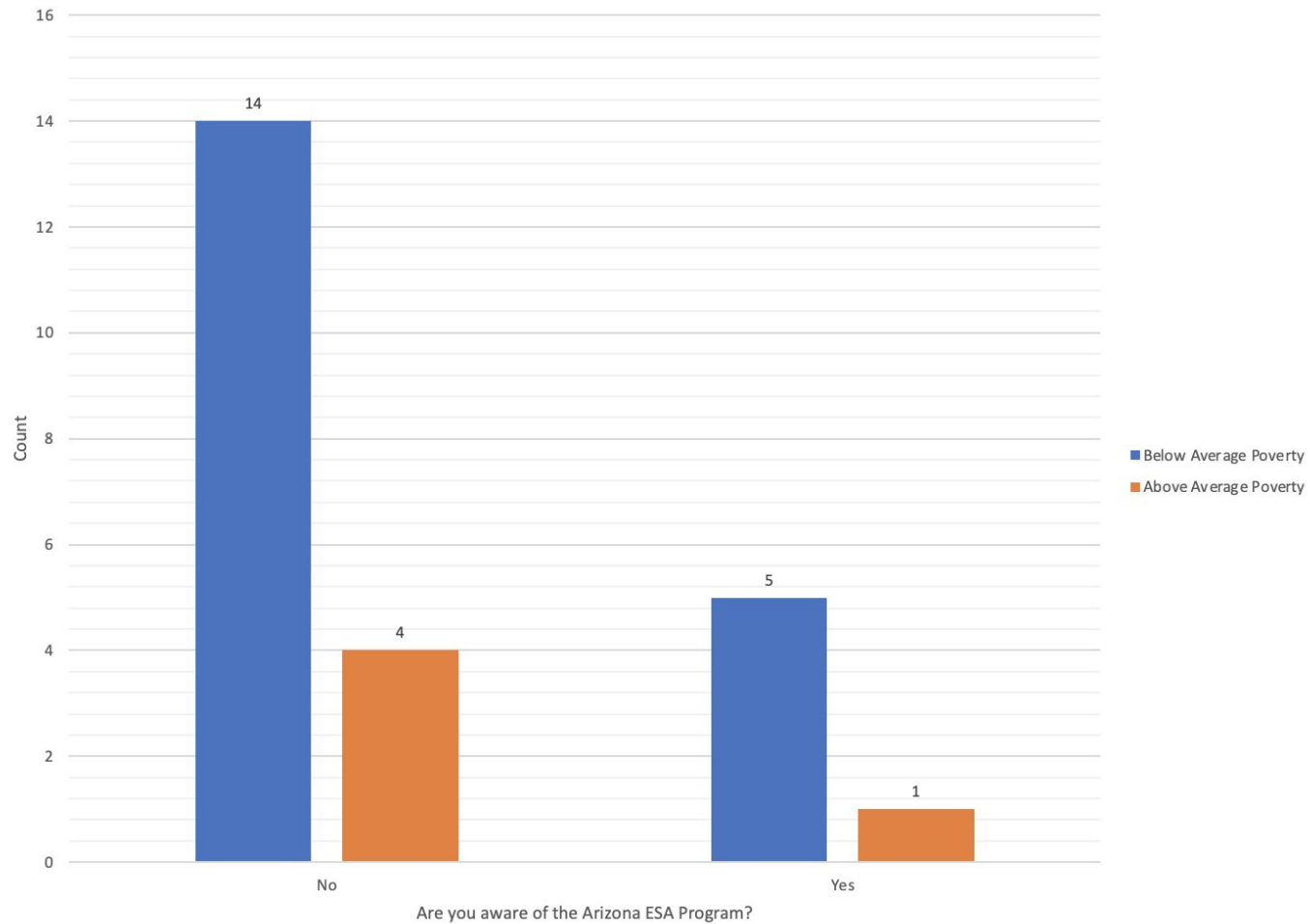
What school district do they attend?

32 responses



- Agua Fria Union High School District
- Ajo Unified District
- Alhambra Elementary District
- Altar Valley Elementary District
- Amphitheater Unified District
- Apache Junction Unified District
- Avondale Elementary District
- Baboquivari Unified School District #40

ESA Program Awareness by Poverty Rate



Takeaways

- Poor but relatively high-performing districts have higher participation than their wealthy counterpart
- But a wealthy district with only low-performing schools is expected to have nearly 5 times the participation rate as a poor district with the same school quality
- Would like to have more data on the number of students who qualify for the program from each district
- More survey responses needed to draw any conclusions about information frictions