

SAT and ACT Data Analysis

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Problem

Participation rates for the SAT tests are getting worryingly low in some States, as compared to the ACT.

Objective

Recommend to the College Board measures to increase the SAT participation in IOWA as part of a larger nation-wide initiative.

2017 SAT

	state	sat_participation	sat_ebrw	sat_math	sat_total
0	Alabama	0.05	593	572	1165
1	Alaska	0.38	547	533	1080
2	Arizona	0.30	563	553	1116
3	Arkansas	0.03	614	594	1208
4	California	0.53	531	524	1055
48	West Virginia	0.14	558	528	1086
49	Wisconsin	0.03	642	649	1291
50	Wyoming	0.03	626	604	1230

2018 SAT

	state	sat_participation	sat_ebrw	sat_math	sat_total
0	Alabama	0.06	595	571	1166
1	Alaska	0.43	562	544	1106
2	Arizona	0.29	577	572	1149
3	Arkansas	0.05	592	576	1169
4	California	0.60	540	536	1076
48	West Virginia	0.28	513	486	999
49	Wisconsin	0.03	641	653	1294
50	Wyoming	0.03	633	625	1257

2017 ACT

	state	act_participation	act_english	act_math	act_reading	act_science	act_composite
1	Alabama	1.00	18.9	18.4	19.7	19.4	19.2
2	Alaska	0.65	18.7	19.8	20.4	19.9	19.8
3	Arizona	0.62	18.6	19.8	20.1	19.8	19.7
4	Arkansas	1.00	18.9	19.0	19.7	19.5	19.4
5	California	0.31	22.5	22.7	23.1	22.2	22.8
49	West Virginia	0.69	20.0	19.4	21.2	20.5	20.4
50	Wisconsin	1.00	19.7	20.4	20.6	20.9	20.5
51	Wyoming	1.00	19.4	19.8	20.8	20.6	20.2

2018 ACT

	state	act_participation	act_english	act_math	act_reading	act_science	act_composite
0	Alabama	1.00	19.1	18.9	18.3	19.6	19.0
1	Alaska	0.33	20.8	19.8	20.6	21.6	20.7
2	Arizona	0.66	19.2	18.2	19.4	19.5	19.2
3	Arkansas	1.00	19.4	19.1	18.9	19.7	19.4
4	California	0.27	22.7	22.5	22.5	23.0	22.1
48	West Virginia	0.65	20.3	19.8	19.4	21.3	20.4
49	Wisconsin	1.00	20.5	19.8	20.3	20.6	20.8
50	Wyoming	1.00	20.0	19.0	19.7	20.6	20.0

Background

- Participation rates represent the proportion of graduating high-school students, in each state, who take the test.
- Participation rates do not consider people other than graduating students.
- Students may either take SAT or ACT, or both.
- Students are generally given mock ACT/SAT tests to help them decide which test to take
- Some states have made it mandatory for students to take either SAT or ACT.

2017 ACT

	State	Participation	English	Math	Reading	Science	Composite
21	Maryland	28%	23.3	23.1	24.2	2.3	23.6

Updated to **23.2**

	State	Participation	English	Math	Reading	Science	Composite
50	Wisconsin	100%	19.7	20.4	20.6	20.9	20.5
51	Wyoming	100%	19.4	19.8	20.8	20.6	20.2x

Corrected to **20.2**

	State	Participation	English	Math	Reading	Science	Composite
0	National	60%	20.3	20.7	21.4	21.0	21.0
1	Alabama	100%	18.9	18.4	19.7	19.4	19.2

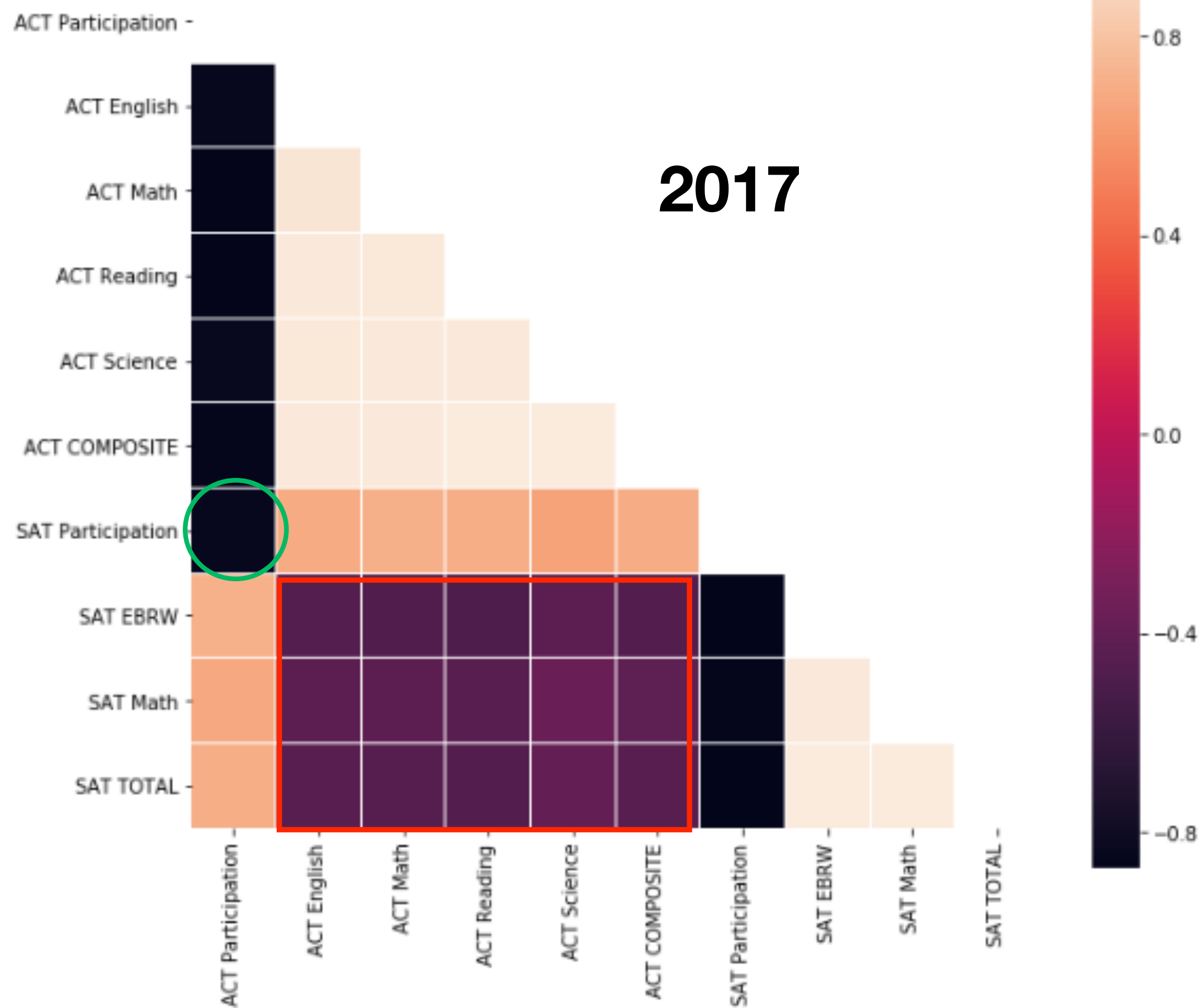
Not a state: **Dropped**

2017 SAT

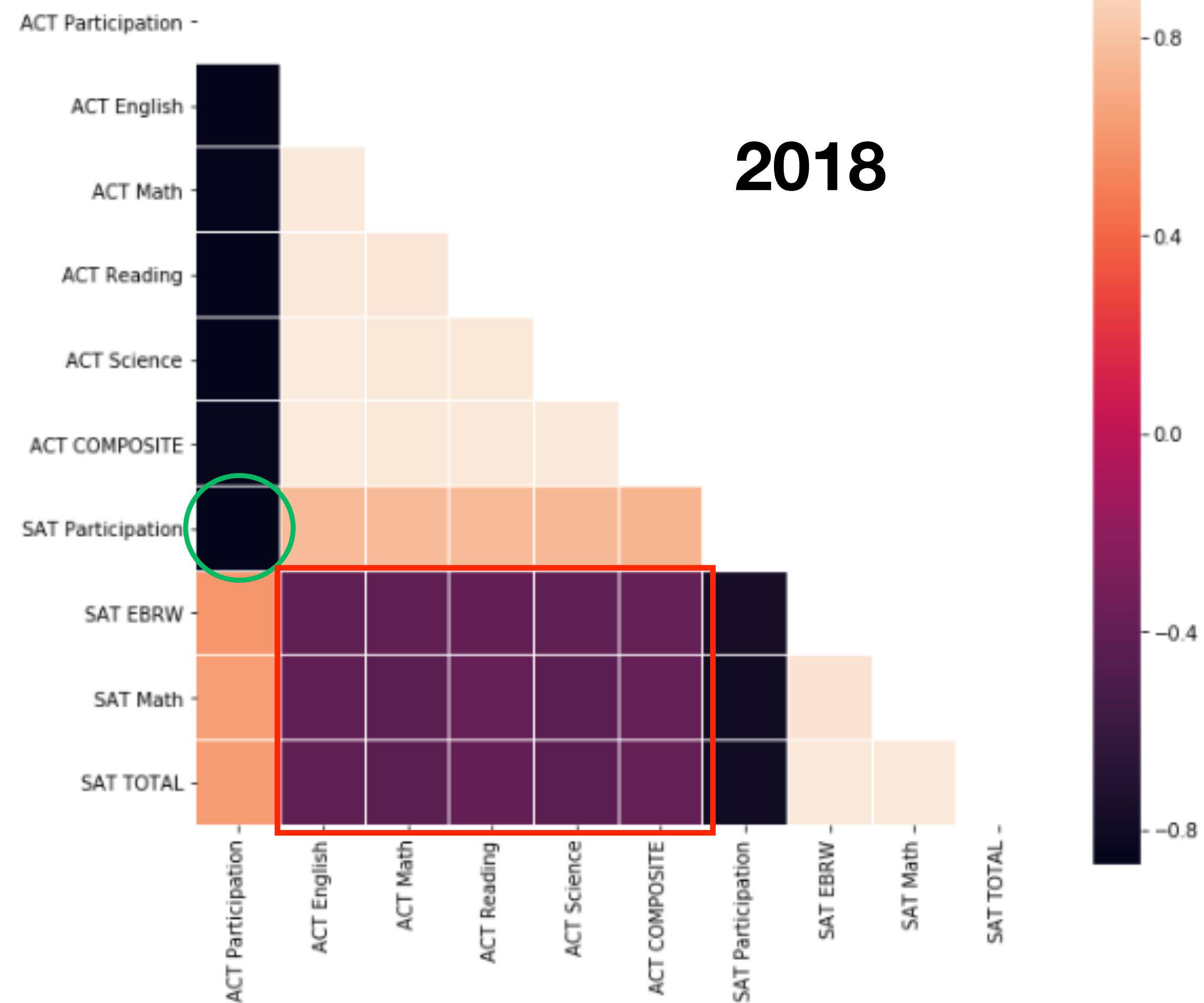
	State	Participation	Evidence-Based Reading and Writing	Math	Total
20	Maryland	69%	536	52	1060

Updated to **524**

Correlation Between 2017 SAT and ACT Component Scores



Correlation Between 2018 SAT and ACT Component Scores



Iowa has the lowest rate for SAT.

State	2017	2018
Iowa	2.0	3.0

Big enough population.

Income & Poverty		Q	Iowa
Population estimates, July 1, 2018, (V2018)			3,156,145
Persons in poverty, percent			11.2%

11.2% poverty rate

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Population estimates, July 1, 2018, (V2018)			3,156,145
Persons in poverty, percent			11.2%

Environmental Context Dashboard

Income & Poverty		Q	Iowa
Population estimates, July 1, 2018, (V2018)			3,156,145
Persons in poverty, percent			⚠ 11.2%

- High school environment
- Neighbourhood environment
- Family environment

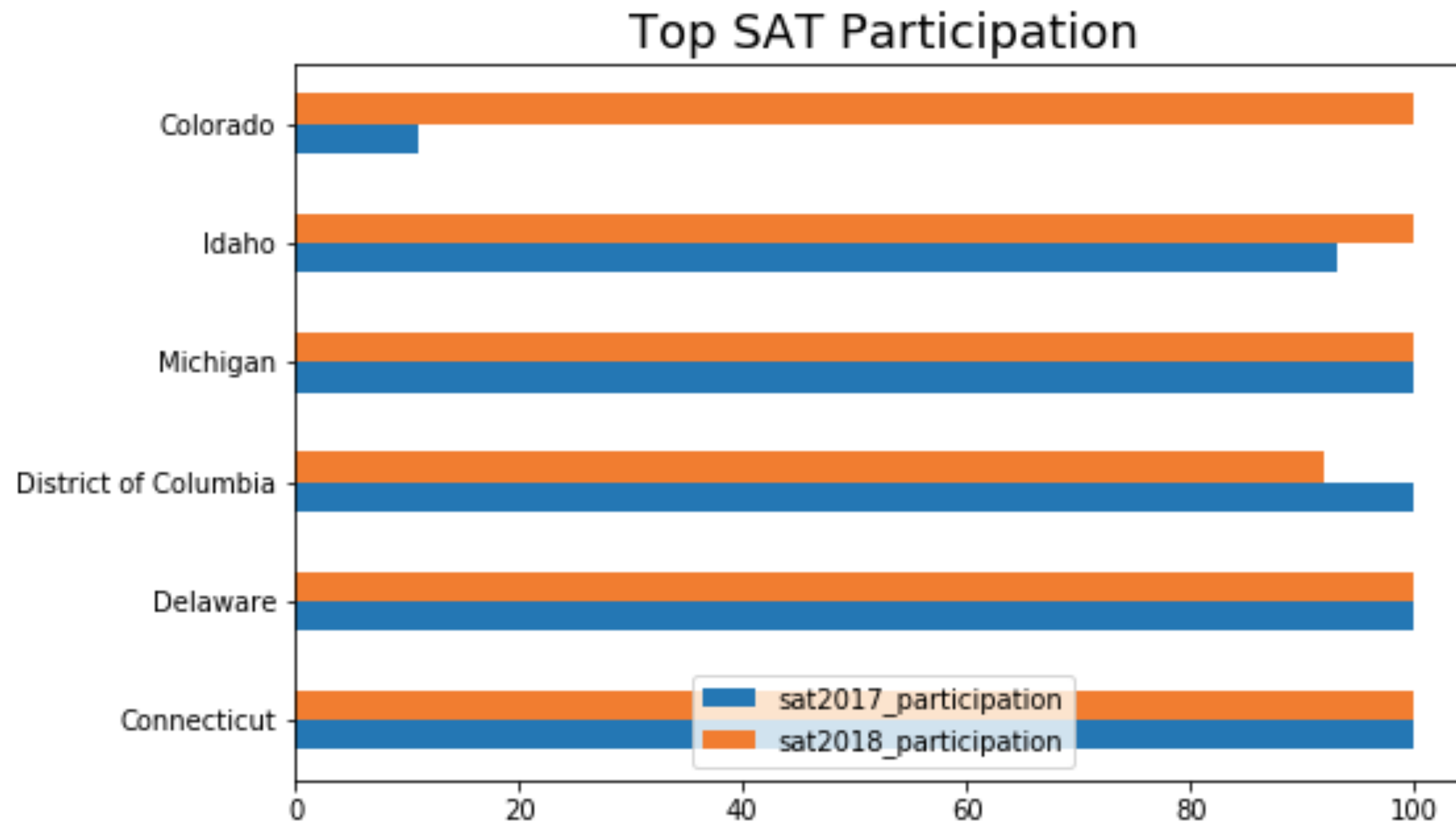
Iowa has a median household income close to national median.

Figure 6:
National Data

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National Data

	Graduation rate 4-year (%)	Educational Attainment (%)				Test Scores			Average Tuition & Fees (\$)			Median Household Income (\$)	College participation rate, students from low- income families (%)
		Some college	Associate's	Bachelor's	Graduate/ Professional	SAT		ACT	Public, 2-year	Public, 4-year	Private, 4-year		
						ERW (Reading, Writing)	Math						
National	53.8	16.7	10.1	20.8	12.6	533	527	21	3,038	8,778	27,951	57,617	34.2
Iowa	65.8	21.0	11.2	19.1	9.3	641	635	21.9	4,478	7,879	25,308	56,247	31.9

Top SAT participation states have **mandatory** tests or have SAT days.



Recommendations

- Work with the government for making SAT mandatory
- Partner schools or ministries to do more SAT Days
- Together with Environmental Context Dashboard, can make it more accessible for low-income families to get University education.
- Provide more mock tests to students