

# **Recommendations to increase SAT participation rates**

# Agenda

- Problem statement
- Data cleaning
- Descriptive statistics
- Inferential statistics
- Discussion & Conclusion

# Problem Statement

- Which states should the college board focus funding on to increase participation rates in the future?

# Data Cleaning

## Highlights

- 5 datasets used:
  - 2017 SAT results
  - 2018 SAT results
  - 2017 ACT results
  - 2018 ACT results
  - 2016 US presidential election vote count
- Errors present within 2017 SAT results dataset were fixed

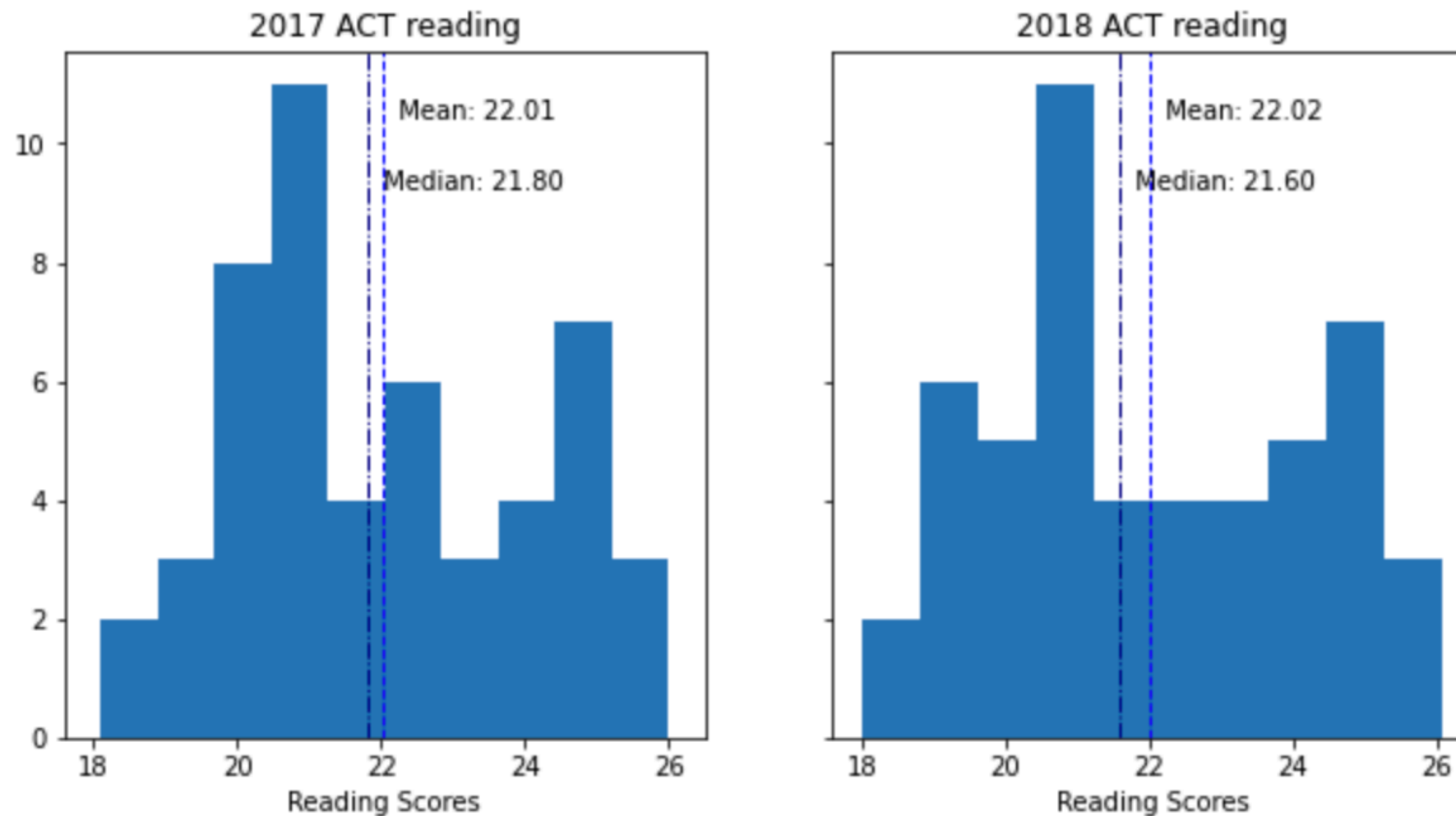
# Descriptive Statistics

Significant increase/decrease in participation

	state	ACT_part_change
5	Colorado	-0.7
13	Illinois	-0.5

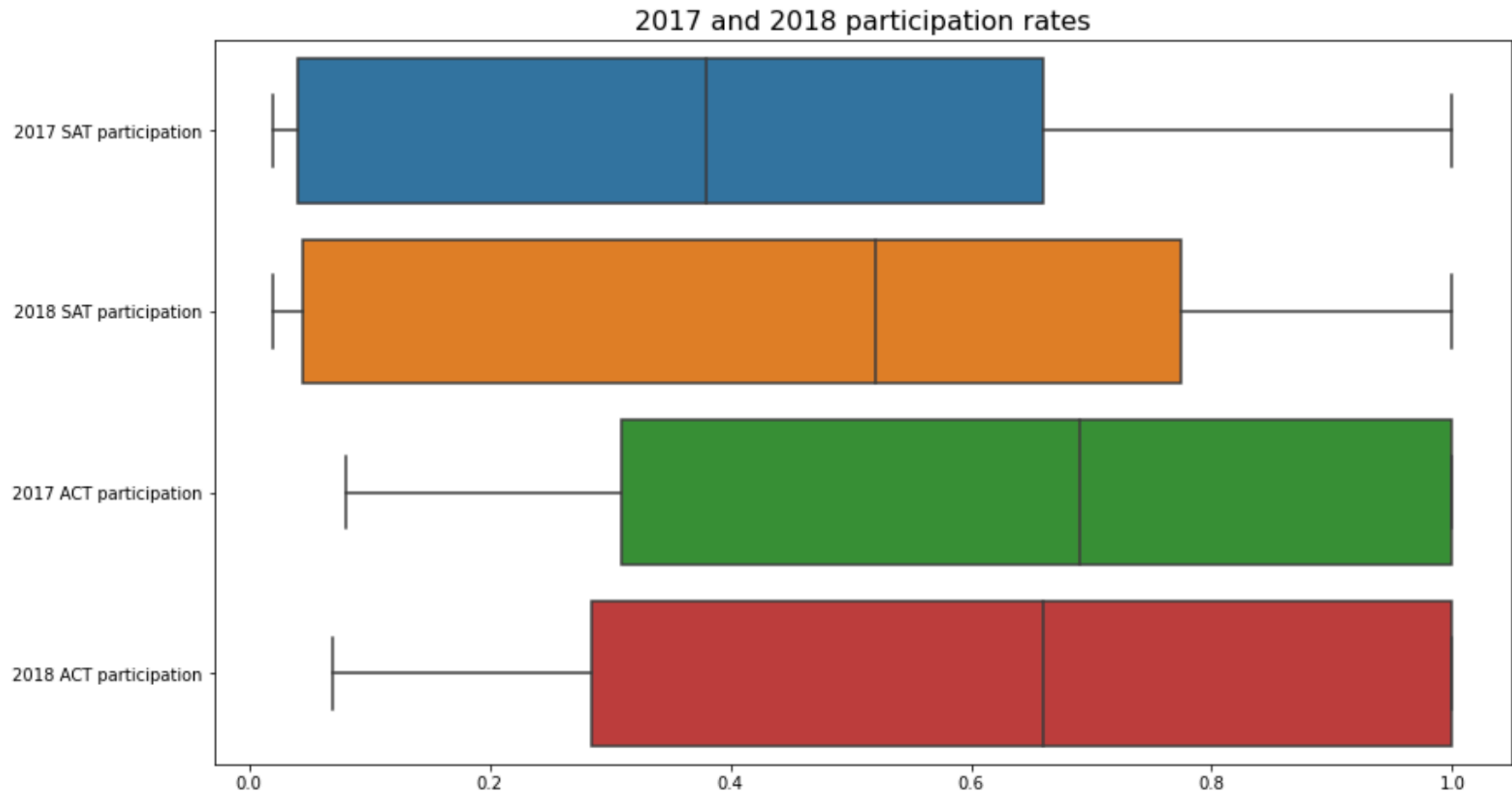
# Descriptive Statistics

## Bimodal Distribution of data



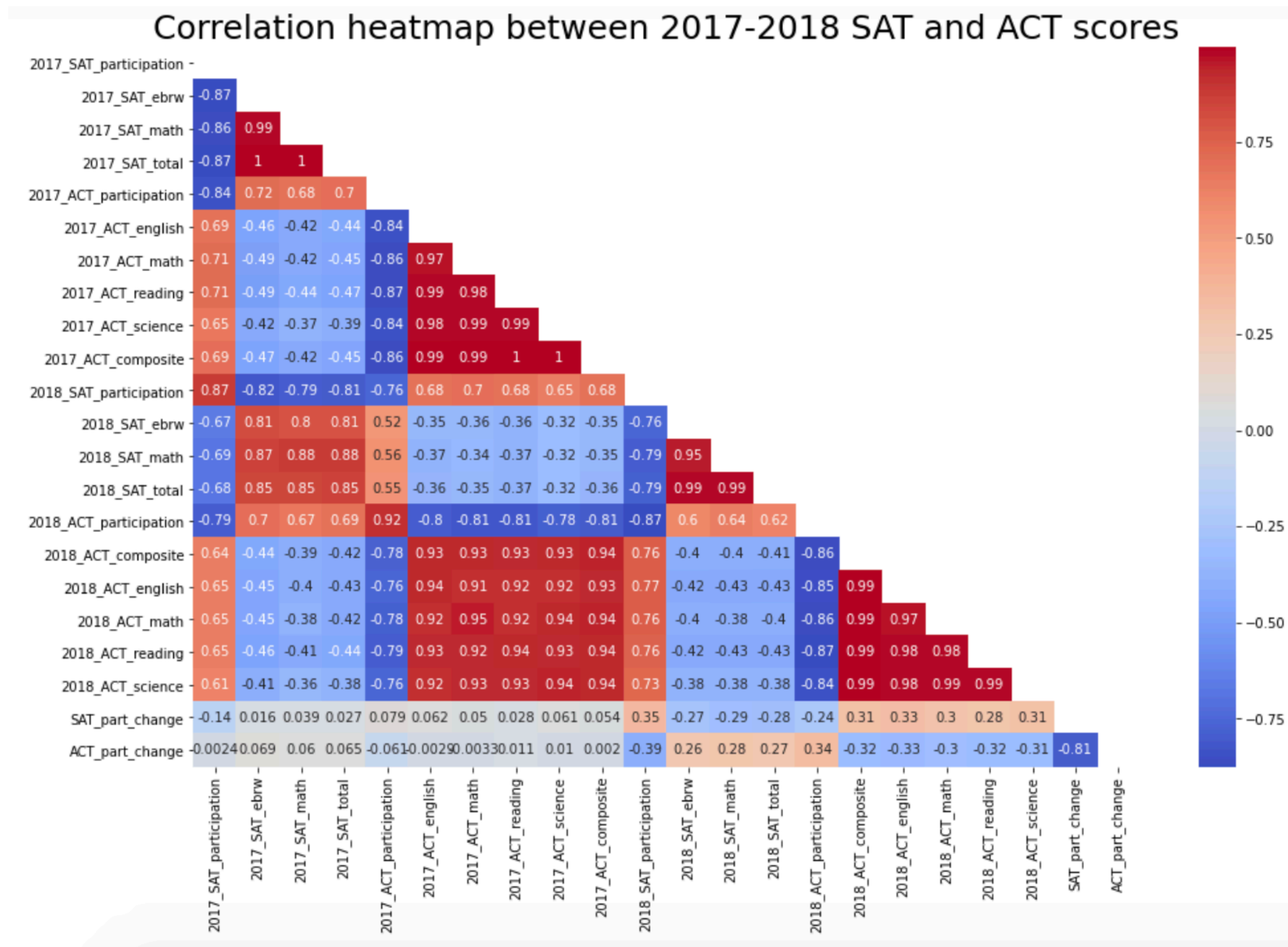
# Descriptive Statistics

## Boxplot of participation rates



# Inferential Statistics

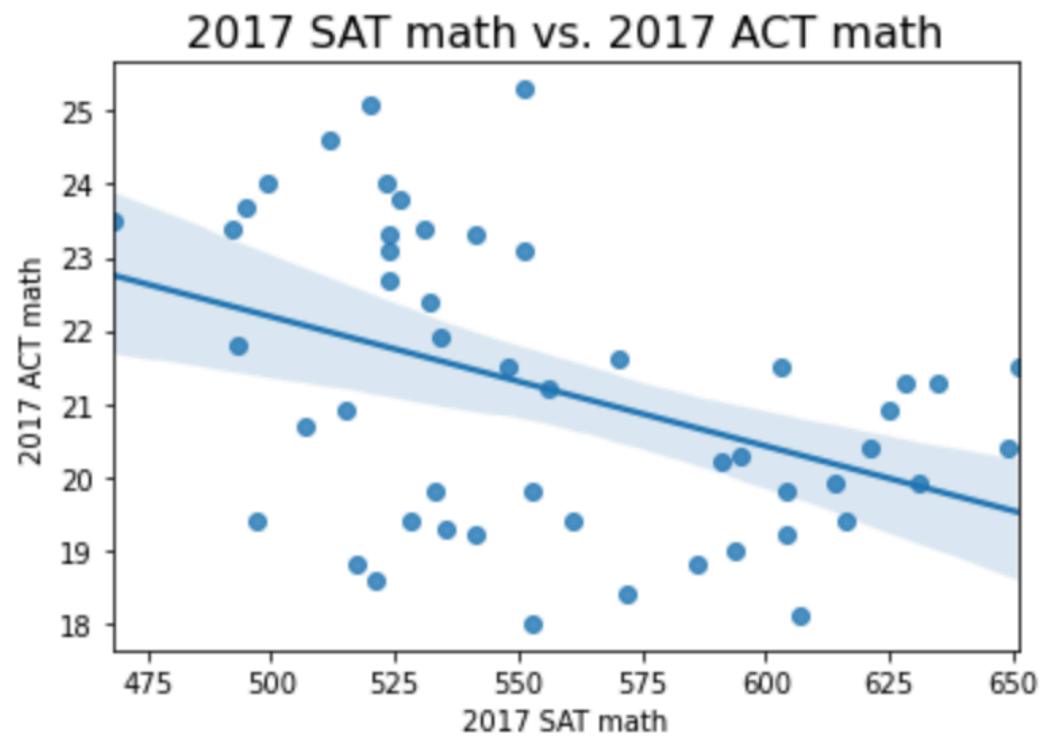
## Correlations



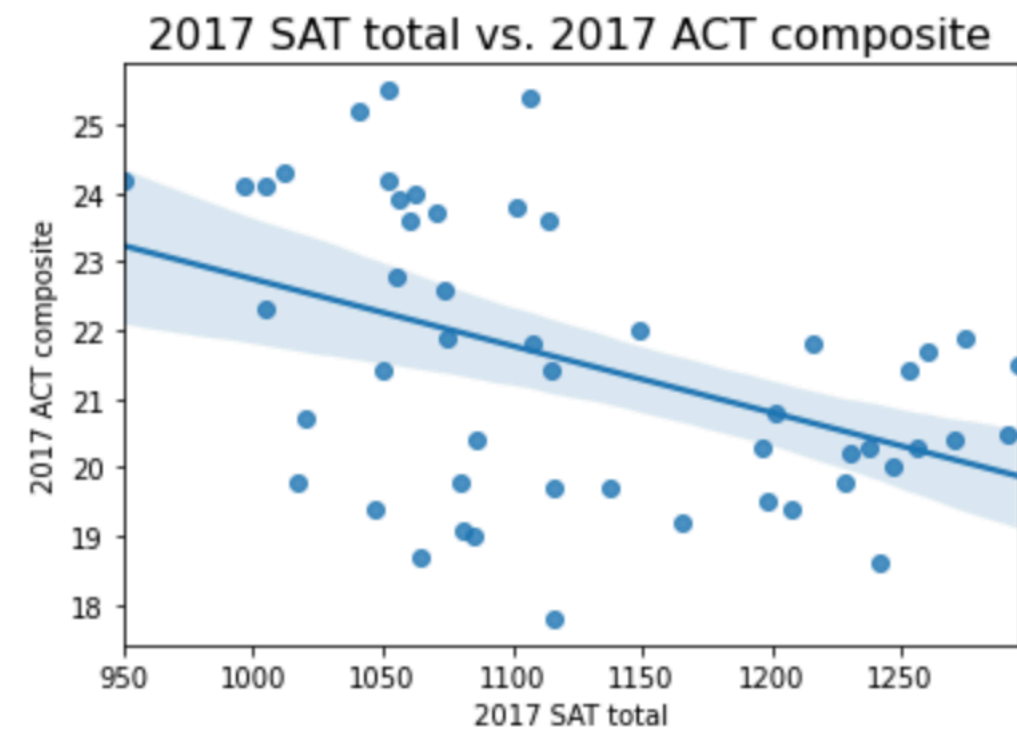


# Inferential Statistics

## Correlations



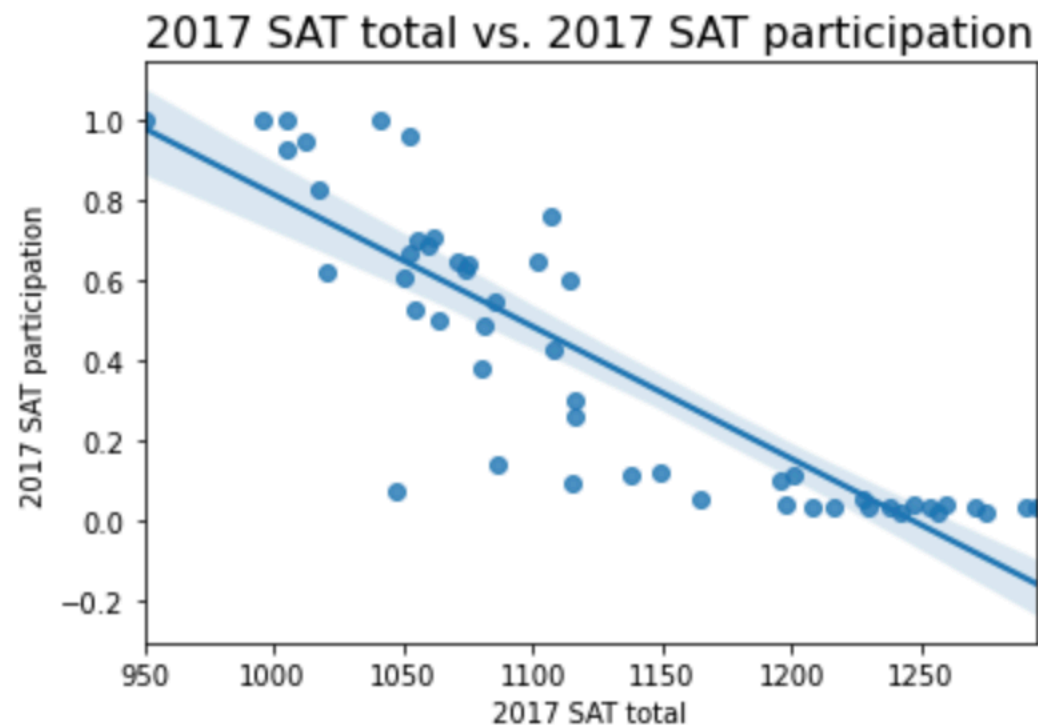
$r = -0.42, p = 0.002$



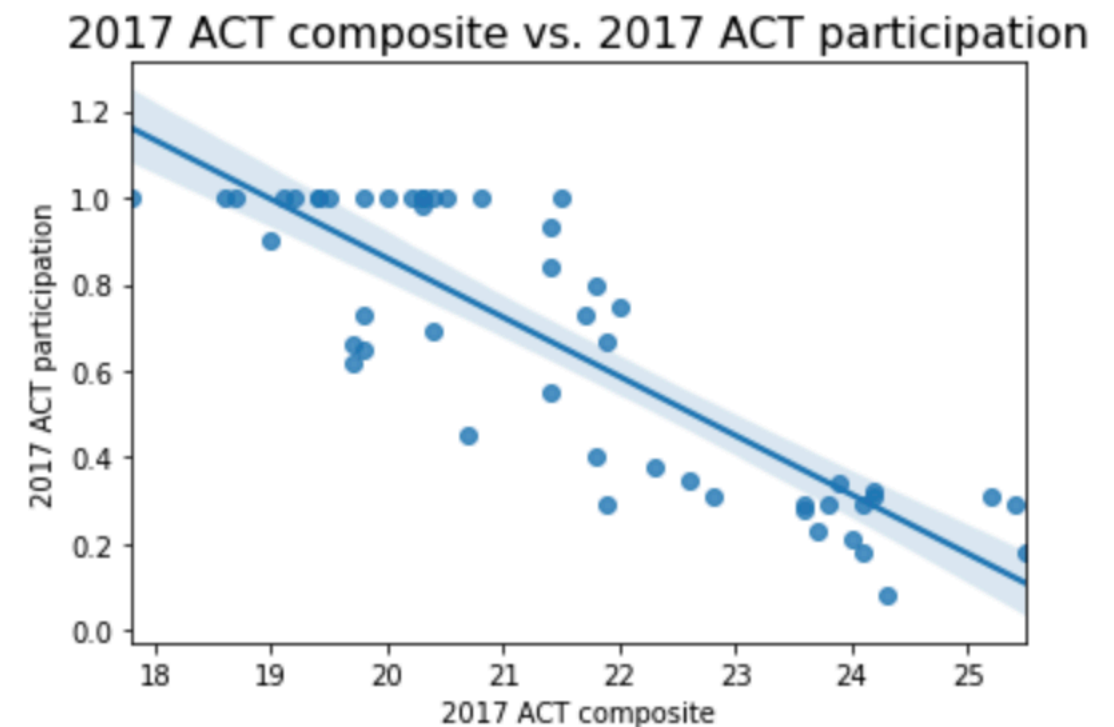
$r = -0.445, p = 0.001$

# Inferential Statistics

## Correlations



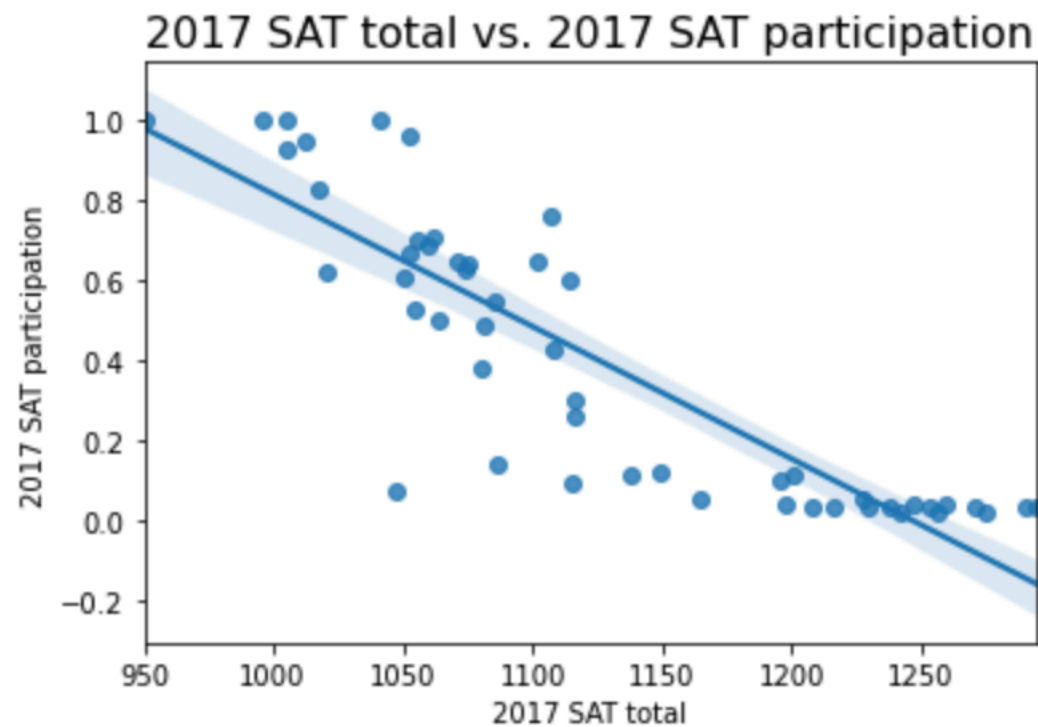
$r = -0.868$ ,  $p = 0.0$



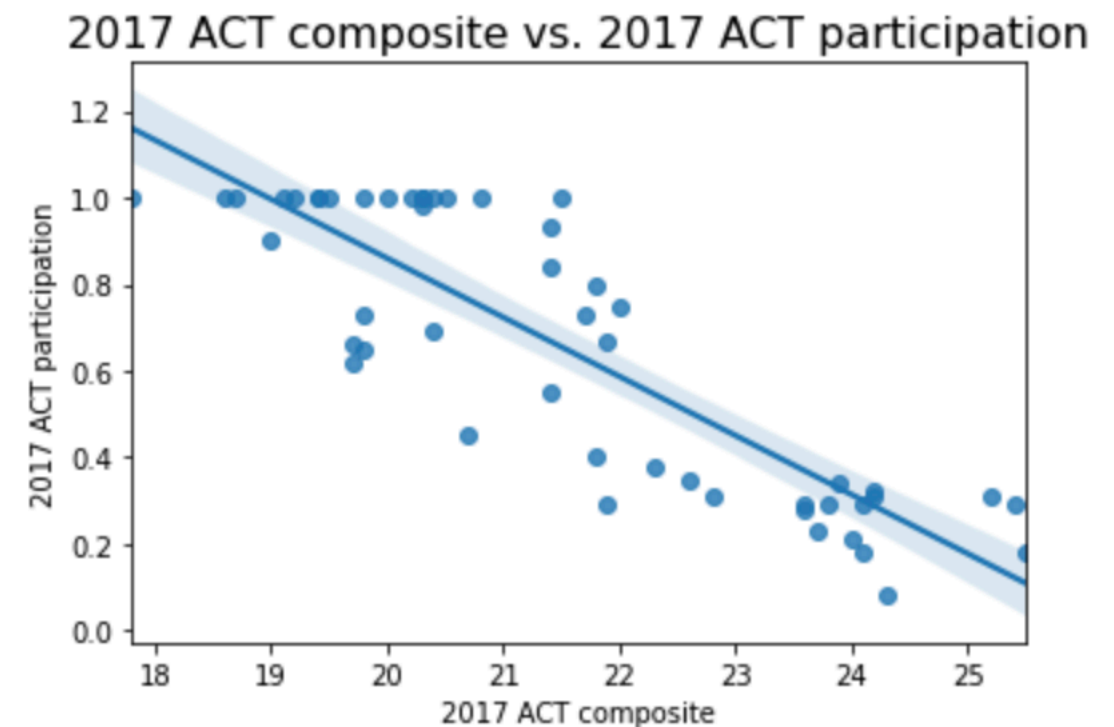
$r = -0.858$ ,  $p = 0.0$

# Inferential Statistics

## Correlations



$r = -0.868, p = 0.0$



$r = -0.858, p = 0.0$

# Discussion & Conclusion

## States with large participation rate changes

	state	2017_SAT_participation	2018_SAT_participation	2017_ACT_participation	2018_ACT_participation
5	Colorado	0.11	1.0	1.0	0.3

	state	2017_SAT_participation	2018_SAT_participation	2017_ACT_participation	2018_ACT_participation
13	Illinois	0.09	0.99	0.93	0.43

- Both Colorado and Illinois had large increases in participation rates due to changes in state policy

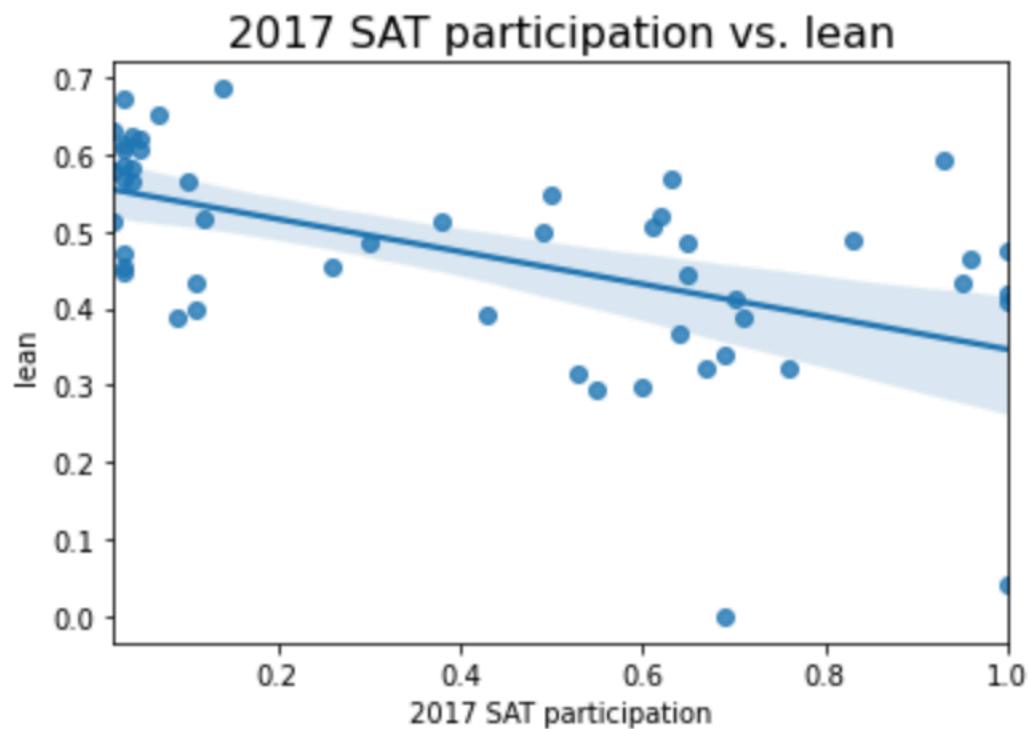
# Discussion & Conclusion

## Further data - political ideology

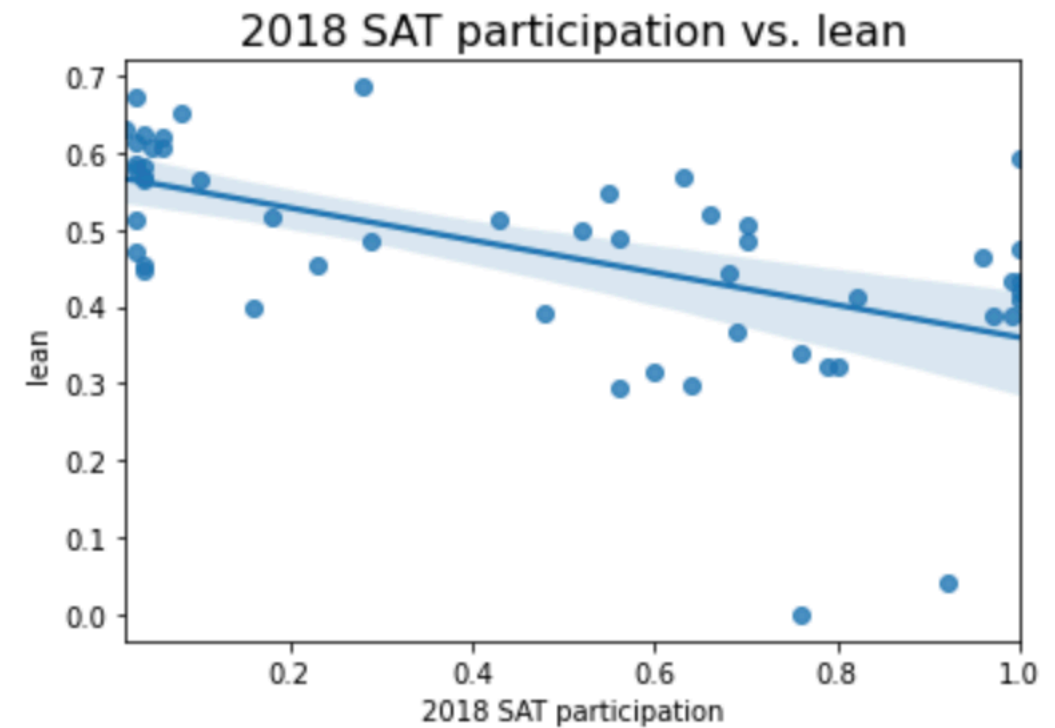
- It is hypothesised that the selection of SAT or ACT is related to a state's political ideology.
- Quantified by percentage of votes for a party candidate over the total number of votes.

# Discussion & Conclusion

## Further data - political ideology



$r = -0.543$ ,  $p = 0.0$



$r = -0.571$ ,  $p = 0.0$

# Discussion & Conclusion

## Summary & recommendation

A review of the data shows that the participation rate for the SAT is heavily dependant on state policy, rather than previous/future scores in the subject.

It is suggested that, instead of aiming for the lowest participation rates, the College Board target left-leaning states that require a mandatory ACT examination and attempt to "flip" them into instead requiring a mandatory SAT examination.

Examples of such states are Nevada, Utah and Wisconsin.

**End**