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# What's Next for the SAT and ACT?

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# Problem Statement

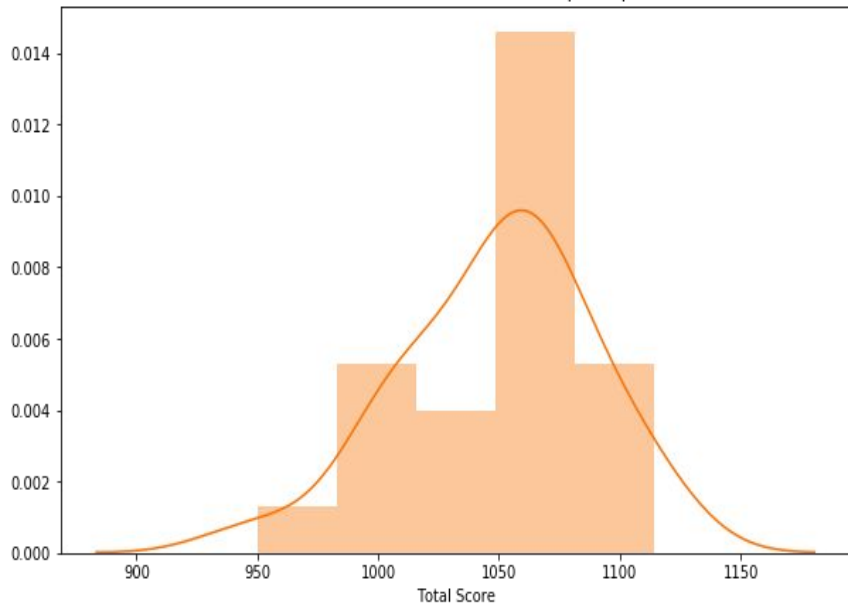
More than three million students take either the SAT or the ACT each year. What insights can we gain from the participation rates and scores for each test?

# Key Findings

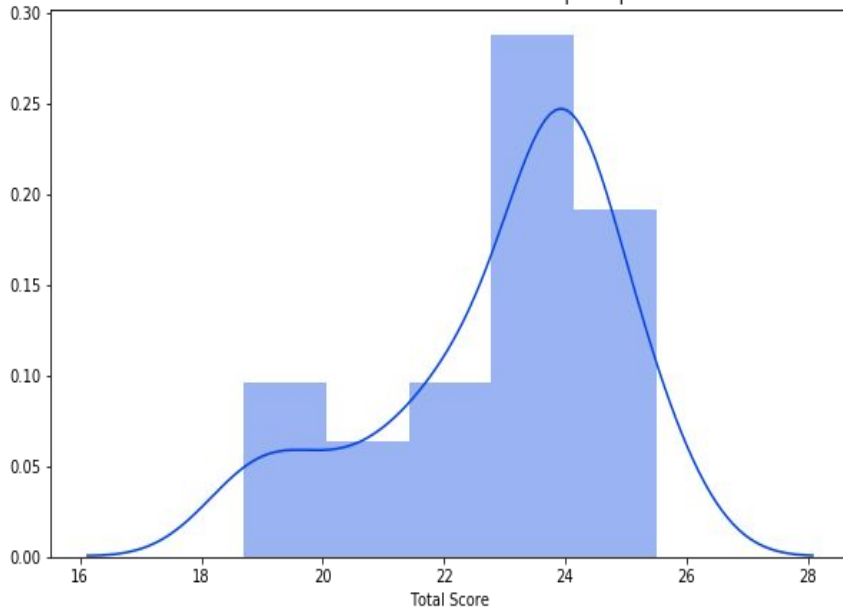
- Correcting for states with low participation yields an approximately normal distribution suitable for conducting inferential statistics.
- Average scores negatively correlated with participation rates
- States with large changes in participation rates tended to score lower on average

# Distribution of scores in states with > 50% participation

2017 SAT Scores in states with > 50% participation

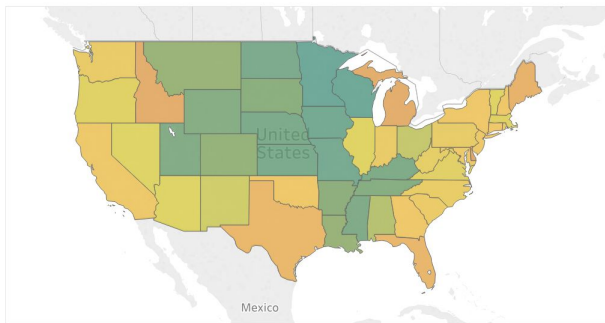


2017 ACT Scores in states with > 50% participation

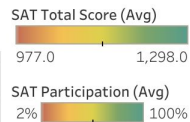
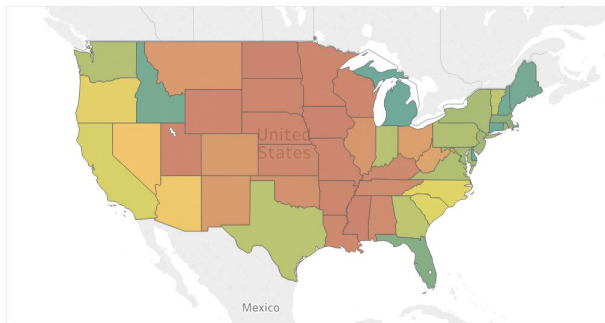


# SAT Participation and Average Scores

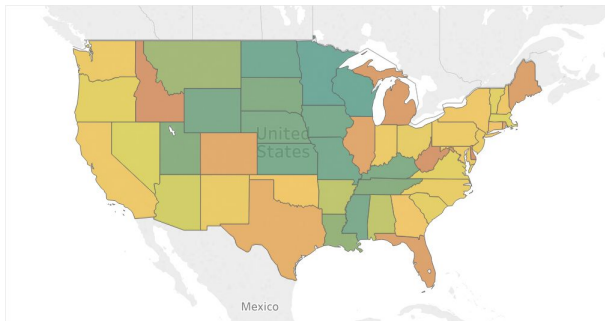
Average SAT Score (2017)



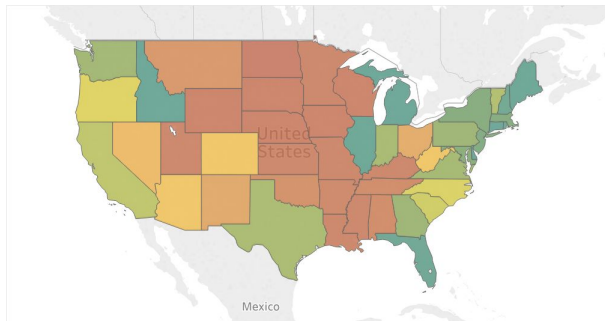
Average SAT Participation (2017)



Average SAT Score (2018)

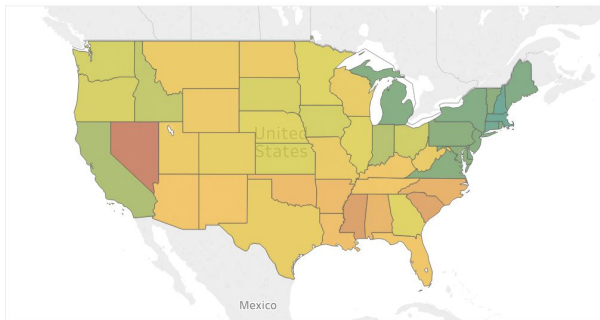


Average SAT Participation (2018)

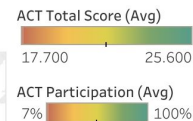
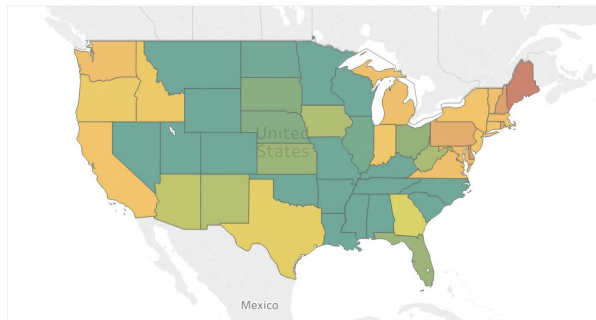


# ACT Participation and Average Scores

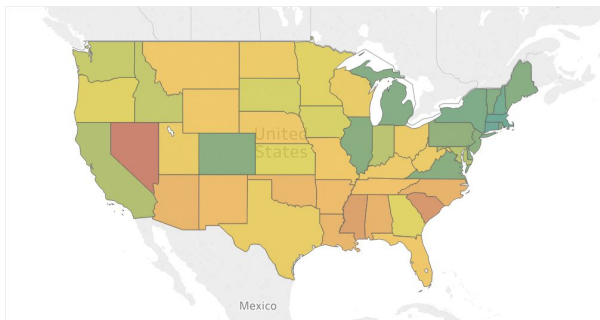
Average ACT Score (2017)



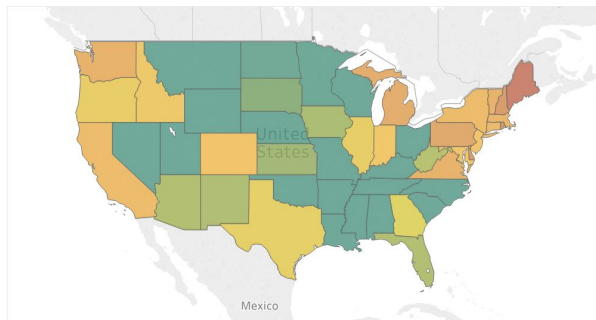
Average ACT Participation (2017)



Average ACT Score (2018)



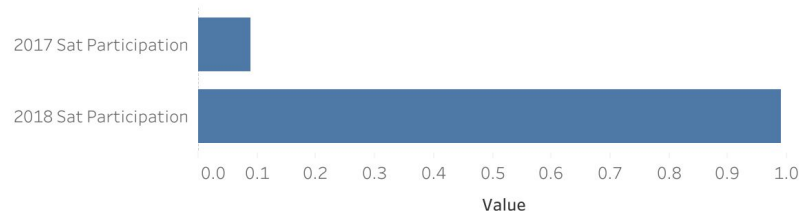
Average ACT Participation (2018)



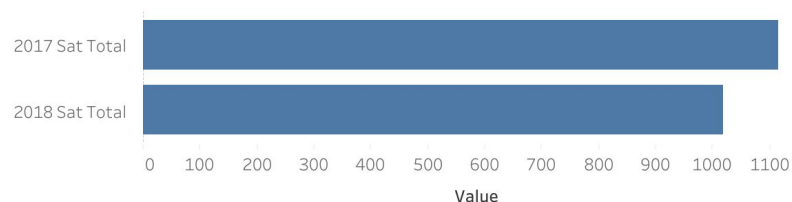
# Illinois - a glance

- In 2017 Illinois signed a contract with the College Board to administer the SAT test to all high school juniors. Previously many high schoolers had taken the ACT test.
- Between 2017 and 2018 Illinois' average SAT scores decreased by **11%**

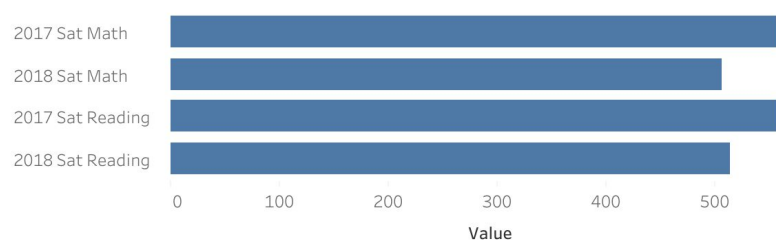
Illinois SAT Participation



Illinois SAT Total



Illinois SAT Subscores



# Conclusions

- To conduct inferential statistics we need to exclude outlier states with low participation rates.
- States with low participation tend to score higher.
  - This is likely the result of selection bias, as more motivated, better prepared students are more likely to take the test if participation is not mandated by the state.
- Large shifts in participation rate can negatively impact scores.
- The trend in participation rates from 2017 to 2018 favors the SAT over the ACT.