

Analysis of SAT scores from 2000

Philip Bradfield

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US SAT SCORES ANALYSIS

The data for this project is the average math and verbal SAT scores for the year 2000 for the fifty US and the District of Columbia. The percentage of the students in each state who took the SAT was also included.

The interesting aspect of this project was explaining what was observed in the data. Fig. 1 is a plot of the participation rates for the 50 states and DC. There is clearly a bimodal aspect to the data with almost an even split between the modes.

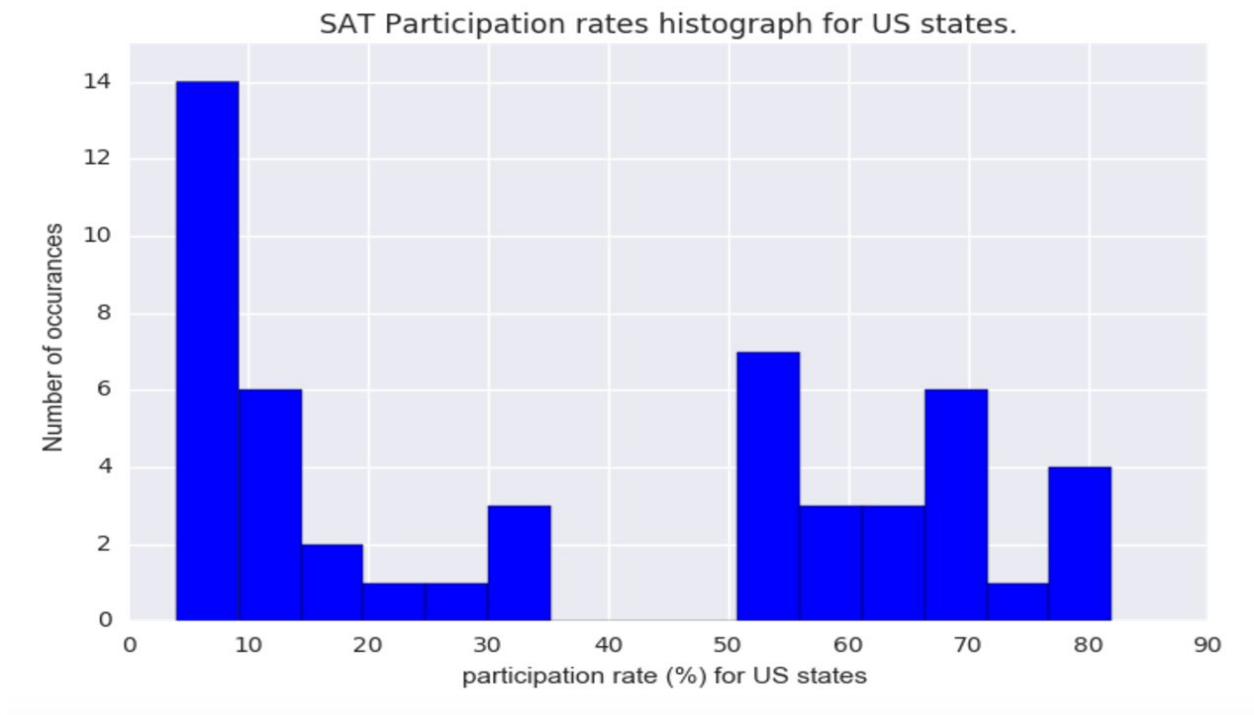


Figure 1. SAT participation rate for the US and Washington DC.

Research on the web turned up a map that indicated in which state the SAT or the ACT was most prevalent. That map proved quite useful for my analysis. (See Figure 2.)

If the SAT/ACT map is used to 'color' the data and show (in blue) the states where the ACT is used more than the SAT, it provides a large clue towards explaining the bimodal behavior observed in the SAT data.

This bimodal behavior was seen throughout the data and the SAT/ACT marking gives a good indication of what is creating the bimodal aspect of the data.

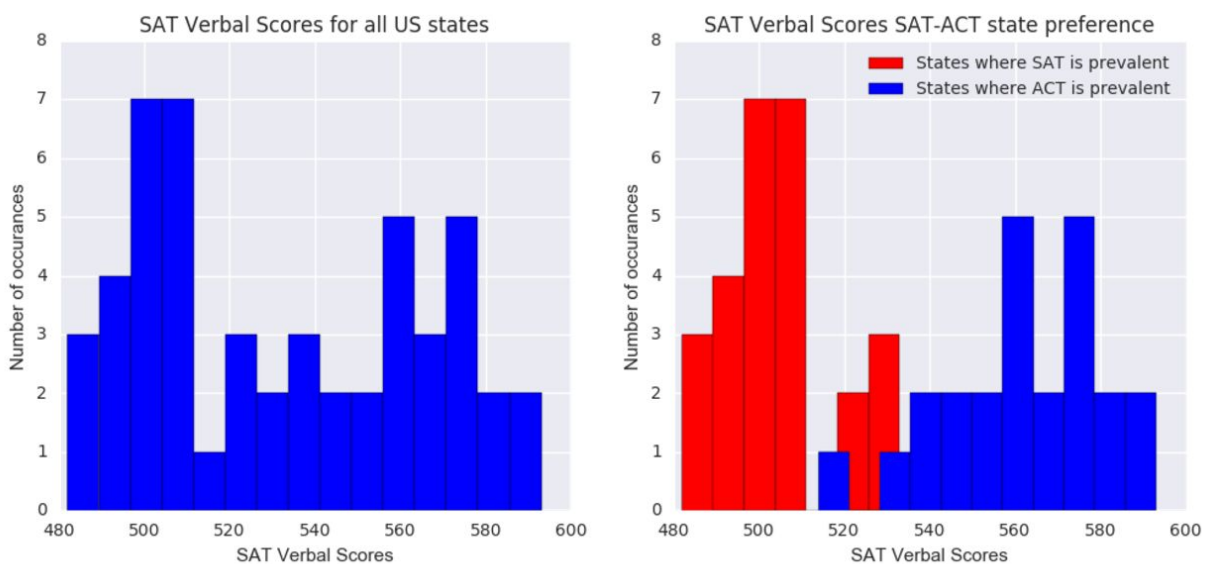


Figure 4. Average SAT verbal scores for the US without (left) and with (right) SAT/ACT filter.

Conclusion

The deep south and the central states may have some cultural differences with the north eastern states, but no reasonable ones that could esoterically explain these participation rate differences. This difference is probably one of choice. I grew up in the midwest and I only took the ACT because the state university I attended in that part of the country didn't require the SAT. It costs money to take these tests and now, people take expensive courses aimed at improving your scores. Further, I note that I have rarely (if ever) heard of a top notch school bragging about their incoming classes' ACT scores but I have heard them frequently quote their students average SAT score.

I believe that the students in the ACT preferring states who take the SAT do so because they want to attend the high ranked schools on the coasts (Ivy league schools and the highly ranked schools in California). They are top level students who will tend to perform better on these type of standardized tests. They are over represented in the attendance of the SAT takers in their state and therefore skew the results of those states to have higher scores as compared to those states where participation rate is over 50%.

References

Link to the SAT-ACT map is at

<http://studypoint.com/ed/wp-content/uploads/2010/04/SAT.ACT-test-takers-map.jpg>)