

Individual Assignment #4

Maps – SAT and LSAT Scores

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Summary—

[SAT scores] After reviewing the plot map of average SAT scores by state, the worst two states with an average of 1400 and lower, are Idaho and Maine. California, Nevada, Texas, and most of the on the east coast of the US have an average of 1500 and lower. Most states located in the middle of the US have an average SAT score of 1600 and above. All 50 states had a higher average in Reading and Math, than Writing.

Things that affect these averages are the number of students whom actually take the test, and the average of Reading, Math and Writing scores per each state. Of the top 25 best state SAT score averages, 19 of those states had an average participation rate of 5%; whereas, the other 6 had an average of 37% participation. The lesser of the participation rates brings on a higher SAT score average, which skews the results of the overall data because the participation percentages are not equal. The bottom half of the 50 state average SAT scores, had a participation rate of 67%; a much higher percentage brought down the average of the scores by 232 points.

Things to focus on to bring higher SAT averages are:

- Participation Rates
- Put more focus on Writing, while keeping the same studies for Reading and Math
- Provide more SAT study focus in the states with averages below 1600

[LSAT Scores] I could not figure out how to get the map to plot the average LSAT scores by state. The data utilized was only for the top 55 law schools in the US; consequently, 25 states did not have any data to show, which is why I set them as “0” for the *State* and *Average LSAT* columns.

Research design, measurement, statistical methods, and predictive models employed—

Research spawned from wanting to understand the average LSAT scores by the top 55 law schools in the US, by state. The model employed utilized a choropleth plot map with different levels of color hues for each average starting at 1400. Choropleth maps use differences in shading, coloring, or the placing of symbols within predefined areas to indicate the average values of a property or quantity in

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those areas.

Overview of programming work—

The programming work that was utilized came from the “Jump Start Code” that was provided via 490_run_choropleth_with_googleViz_v001.R, and make_us_choropleth_map_v004.R files. To get an interactive map, The *GoogleVis* library was used in order to be able to have an map interaction for users to scroll and click over each state to see the average scores—a javascript code was also used to coincide with this libraries interactivity.