Illustration of How to Work with Confounding Variables

(Data was extracted from the 1997 Digest of Educational Statistics, an annual publication of the U.S. Department of Education)

Does state expenditure per student affect average SAT scores per state?

X variable: _______________

Y variable: _______________

Describe the relationship.

What confounding variables might be involved?
So, let’s look at one of these confounding variables. Here is a scatterplot of percentage of state students taking the SAT versus average SAT total for the state.

![Scatterplot of Average Total vs percentage of all eligible](image1)

If we incorporate a categorical variable that described the percentage of students taking the SAT (top 1/3, middle 1/3 or bottom 1/3), do we see the same trend?

![Scatterplot of Average Total vs Current State Expenditure](image2)