Suppressor Effects

- Normally, we would not consider a variable that does not correlate significantly with our outcome variable as an important predictor and not include it in a regression analysis.

- But sometimes a variable that does not correlate with the outcome appears to have a significant effect on the model when entered in the regression.

- This variable is called a *suppressor* and it improves the regression model by suppressing variance in other predictor variables.

- Although the suppressor variable does not correlate with the output variable it does correlate (often quite strongly) with at least one of the other predictor variables.

Example of a suppressor effect

Imagine research shows that in train drivers there's a relationship between IQ and tendency to make errors (missing red lights, speeding etc.) with higher IQ drivers tending to make fewer errors - however, higher IQ drivers might also become bored more quickly (which actually increases errors).

In this case, boredom might be a suppressor variable and adding it as a predictor should give a better indication of the relationship between IQ and error making while train driving. We'll look at the effect of a suppressor in the lab…