3.3 Review Questions

3.3.R1

1/1 point (graded)

Suppose we are interested in learning about a relationship between X_1 and Y, which we would ideally like to interpret as causal.

True or False? The estimate $\hat{\beta}_1$ in a linear regression that controls for many variables (that is, a regression with many predictors in addition to X_1) is usually a more reliable measure of a causal relationship than $\hat{\beta}_1$ from a univariate regression on X_1.

- ○ True
- ◉ False ✔

Explanation

Adding lots of extra predictors to the model can just as easily muddy the interpretation of $\hat{\beta}_1$ as it can clarify it. One often reads in media reports of academic studies that "the investigators controlled for confounding variables," but be skeptical!

Causal inference is a difficult and slippery topic, which cannot be answered with observational data alone without additional assumptions.

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ℹ Answers are displayed within the problem