3.12: Linear Relationships (4 of 4)

Learning Objectives

- Use a correlation coefficient to describe the direction and strength of a linear relationship. Recognize its limitations as a measure of the relationship between two quantitative variables.

Properties of *r*

Let's Summarize

- A special case of the relationship between two quantitative variables is the **linear** relationship in which a straight line simply and adequately summarizes the relationship.
- When the scatterplot displays a linear relationship, we supplement it with the correlation coefficient (*r*), which measures the *strength* and *direction* of a linear relationship between two quantitative variables. The correlation ranges between −1 and 1. Values near −1 indicate a strong negative linear relationship, values near 0 indicate a weak linear relationship, and values near 1 indicate a strong positive linear relationship.
- The correlation is an appropriate numerical measure only for linear relationships and is sensitive to outliers. Therefore, the correlation should be used only as a supplement to a scatterplot (after we look at the data).

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