3.7: Scatterplots (5 of 5)

Learning Objectives

- Use a scatterplot to display the relationship between two quantitative variables. Describe the overall pattern (form, direction, and strength) and striking deviations from the pattern.

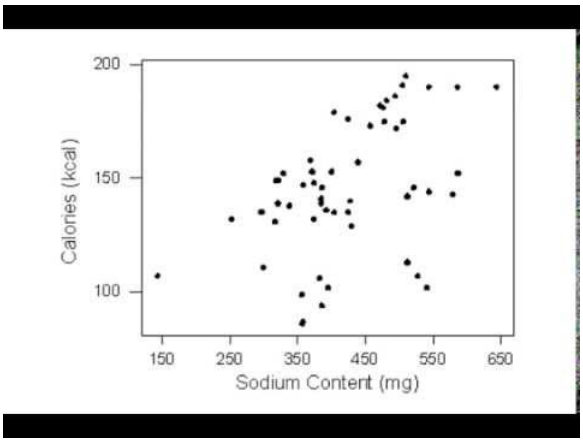
Labeling Groups in a Scatterplot

If we graph data from two or more groups in a scatterplot, the relationship between the two quantitative variables can be hidden or unclear. We can use a categorical variable to label groups within the scatterplot, then look for patterns within each group. The relationship may be clearer within each group.

Example

Hot Dogs

A study was conducted by a concerned health group in which 54 major hot dog brands were examined. Using this data, we explore the relationship between sodium content and calories. We begin by making a scatterplot with data from the three types of hot dogs: beef, poultry, and meat (meat is a combination of pork, beef, and poultry).



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Let's Summarize

- The relationship between two quantitative variables is visually displayed using the scatterplot, where each point represents an individual. We always plot the explanatory variable on the horizontal x-axis and the response variable on the vertical y-axis.
- When we explore a relationship using the scatterplot, we should describe the *overall pattern* of the relationship and any *deviations* from that pattern. To describe the overall pattern, consider the *direction*, *form*, and *strength* of the relationship. Assessing the strength just by looking at the scatterplot can be problematic; using a numerical measure to determine strength is discussed later in this course.
- Adding labels to the scatterplot that indicate different groups or categories within the data might help us gain more insight about the relationship we are exploring.

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