

Comparing averages

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Mean and median

The mean is the sum of the observations divided by their number. The median is the middle observation after the values have been sorted.

For weekly reading times of 20, 25, 30, 35 and 140 minutes, the mean is 50 minutes and the median is 30 minutes. The large final value changes the mean more than the median.

Choosing a summary

Use the median when a small number of unusually large values would make the mean hard to interpret. Use the mean when the total and the number of observations are both relevant.

Always report the unit and the number of observations. Two groups can have the same average and different spreads.

Checking the data

Look for missing values and repeated records before calculating a summary. A blank field is not the same as a measured zero.

Record any exclusions so another reader can repeat the calculation. Do not remove a value simply because it is inconvenient.

Key terms

Median: The middle value in an ordered set.

Range: The largest value minus the smallest value.

Outlier: An observation far from most other observations.

Questions for review

- Why is the mean larger than the median in the reading-time example?
- What information is lost when a group is described only by its average?