Chapter 4

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Quick review

measure of central tendency:

- Compute the (Arithmetic) Mean to
  - Describe the central location of a single set of interval and ratio data
- Compute the Median to
  - Describe the central location of a single set of interval and ratio or ordinal data
- Compute the Mode to
  - Describe a single set of nominal, ordinal, interval or ratio data

Quick review (2)

Measures of relative standing: Interval-Ratio-Ordinal data.

- Percentile: The value for which P percent are less than that value and $(100 - P)\%$ are greater than that value.
  - Location of percentile in ordered data: $L_P = (n+1)\frac{P}{100}$.
- Quartiles: Special case of percentiles$\rightarrow$ 25th (Q_1), 50th (Median-Q_2), and 75th percentiles(Q_3).

Quick review (3)

Measure of variability:

- Range: $\max - \min$.
- Interquartile range $= Q_3 - Q_1$.
- Variance: $s^2 = \frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}$.
  - What if we have **Population**'s data?
- Standard deviation: $s = \sqrt{s^2}$.
  - What if we have **Population**'s data?
- Coefficient of variation: $\text{cv} = \frac{s}{\bar{x}}$.

Quick review (4)

Measures of Linear Relationship:

- Covariance: $s_{xy} = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{n-1}$.
- Correlation: $r = \frac{s_{xy}}{s_x s_y}$.
- Least Square line: $\hat{y} = b_0 + b_1 x$ where $b_1 = \frac{s_{xy}}{s_x^2}$ and $b_0 = \bar{y} - b_1 \bar{x}$.
- Coefficient of determination r^2.