

Tutorial Concept Sheet 3

Measures of Central Tendency:

Median:

- “Number in the Middle” (even vs. odd amount of numbers)
- Minimum Distance
- Not sensitive to Outliers

Mean:

- “Average”: $\bar{X}_{\bullet} = \frac{1}{N} \sum_{i=1}^N X_i$
- Minimum *Squared* Distance
- Sensitive to Outliers

Computing and estimating the mean from a frequency distribution
Computing the mean for combined groups, the “update” formula

Measures of Variability:

- Range – Inclusive Range
- Semi-Interquartile Range
- Variance = Average Squared Distance = Average Squared Deviation Score

○ Deviation Score Formula

$$S^2 = \frac{1}{N-1} \sum_{i=1}^N (x_i - \bar{x}_{\bullet})^2 = \frac{1}{N-1} \sum_{i=1}^N dx_i^2$$

○ Raw Score Computational Formula

$$S^2 = \frac{1}{N-1} \left(\sum_{i=1}^N X_i^2 - \frac{\left[\sum_{i=1}^N X_i \right]^2}{N} \right)$$

- Standard Deviation (SD)

Sample 1: (12, 15, 8, 4, 6, 13, 20, 7, 11, 8), Sample 2: (-2, 7, 9, 6, 10, 13, 5, 8, 8, 10)