

SAMPLING METHODS

Convenience - collect data from easily accessible sources

Random - Everyone has an = chance of being selected.

Systematic - Select every K^{th} person

Stratified - 1) Divide the population into groups
2) Randomly select a few people from every group

Cluster - 1) Divide population into groups
2) Randomly select a few of the groups + survey everyone in those groups

MEASURES OF VARIATION

measure the "spread" of the data

$$\text{Range} = \text{Highest Value} - \text{Lowest Value}$$

most affected by an extreme value

	<u>B 3</u>	<u>B 4</u>
Mean	79	86
	26, 79-102	78-92
Range	102-26	92-78
	76	14

Standard Deviation ← most valued by statisticians

- the "average" of how much each piece of data varies from the mean.

$$\{6, 8, 9, 11, 12, 28, 34, 36\}$$

$$\bar{x} = \frac{144}{8} = 18$$

$$\begin{array}{cccccccc} 6-18 & 8-18 & & & & & & \\ (-12)^2 & (-10)^2 & (-9)^2 & (-7)^2 & (-6)^2 & (-10)^2 & (-16)^2 & (-18)^2 \\ & & & -44 & & 44 & & \end{array} = 0$$

Calculator: $12^2 + 10^2 + 9^2 + 7^2 + \dots$

$$= \frac{1090}{8} = \sqrt{136.25} \approx 11.67$$

population
 σ

sample
 s

$$\frac{1090}{8-1} =$$

- 1) Find mean
- 2) Data-Mean
- 3) Square the difference

- 4) Find the mean of the squared numbers
- 5) Square root of mean

Calculator: St. dev = $\sigma \times$
Range = Max-Min