Sampling Methods

Convenience – collect data from readily available sources

Random – Everyone has an = chance of being selected.

Systematic – Select every K^{th} person

Stratified – 1) Divide population into groups
2) Randomly select a few people from each group.

Cluster – 1) Divide population into groups
2) Randomly select a few groups & survey everyone in those groups.

Measures of Variation (Part 1)

Measure the "spread" of the data

1) Range = Highest value − Lowest value 47, 81−103
most affected by an extreme value

* 2) Standard Deviation – the "average" of how much each piece of data varies from the mean.
most preferred by statisticians

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

$\mu = \frac{144}{8} = 18$

1) Find mean
2) Data − mean
3) Square the differences

$(-12)^2 + (-10)^2 + (-9)^2 + (-7)^2 + (-6)^2 + (10)^2 + (16)^2 + (18)^2$ (6−18, 8−18)

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

$= \frac{1090}{8}$

$= \sqrt{136.25}$

$= 11.67$

4) Find the mean of the squares
5) $\sqrt{\text{mean}}$

Standard deviation

Sample: s

Population: σ ← calculator