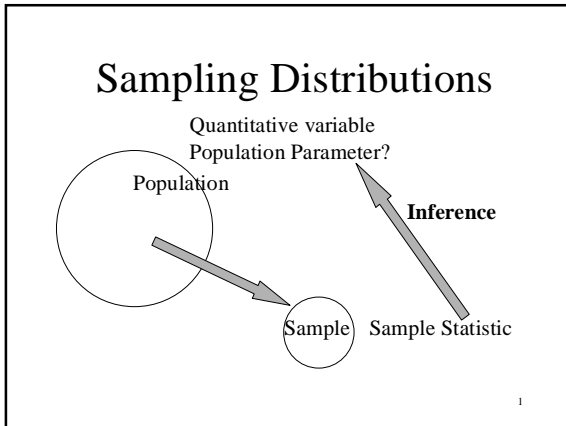


Stat 104 – Lecture 18



Example

- Population? Stat 104 students in Section A.
- Variable? Number of children in your family.
- Type of variable? Numerical or Quantitative.

2

Example

- Population
 - All Stat 104 students in Section A.
- Population Parameter
 - The average number of children in a family of a Stat 104, Section A, student.

3

Stat 104 – Lecture 18

Example

- Sample
 - 4 randomly selected students.
- Sample Statistic
 - The sample mean number of children in the 4 students' families.

4

What have we learned?

- Different samples produce different sample means.
- There is variation among sample means.
- Can we model this variation?
 - What is a model for the distribution of the sample mean?

5

Simulation

We can simulate the repeated random selection of samples of individuals from a population.

www.ruf.rice.edu/~lane/stat_sim/sampling_dist/index.html

6

Stat 104 – Lecture 18

Simulation

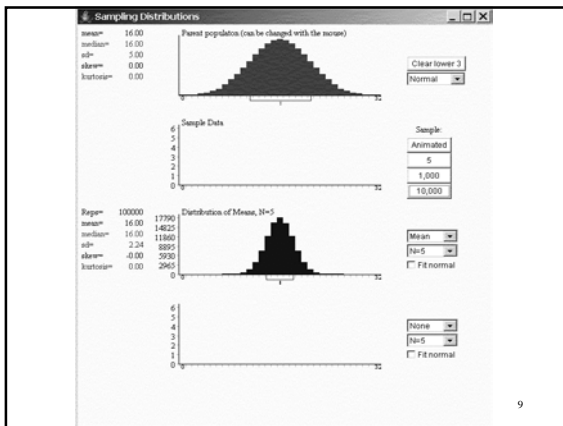
- Simple random sample of size $n=5$.
- Repeat many times.
- Record the sample mean, \bar{y} , to simulate the sampling distribution of \bar{y} .

7

Simulation

- Different samples will produce different sample means.
- There is variation in the sample means.
- Can we model this variation?
 - What is the distribution of the sample mean?

8



9
