SAMPLING

I. Purpose of sampling

1. Why sampling?

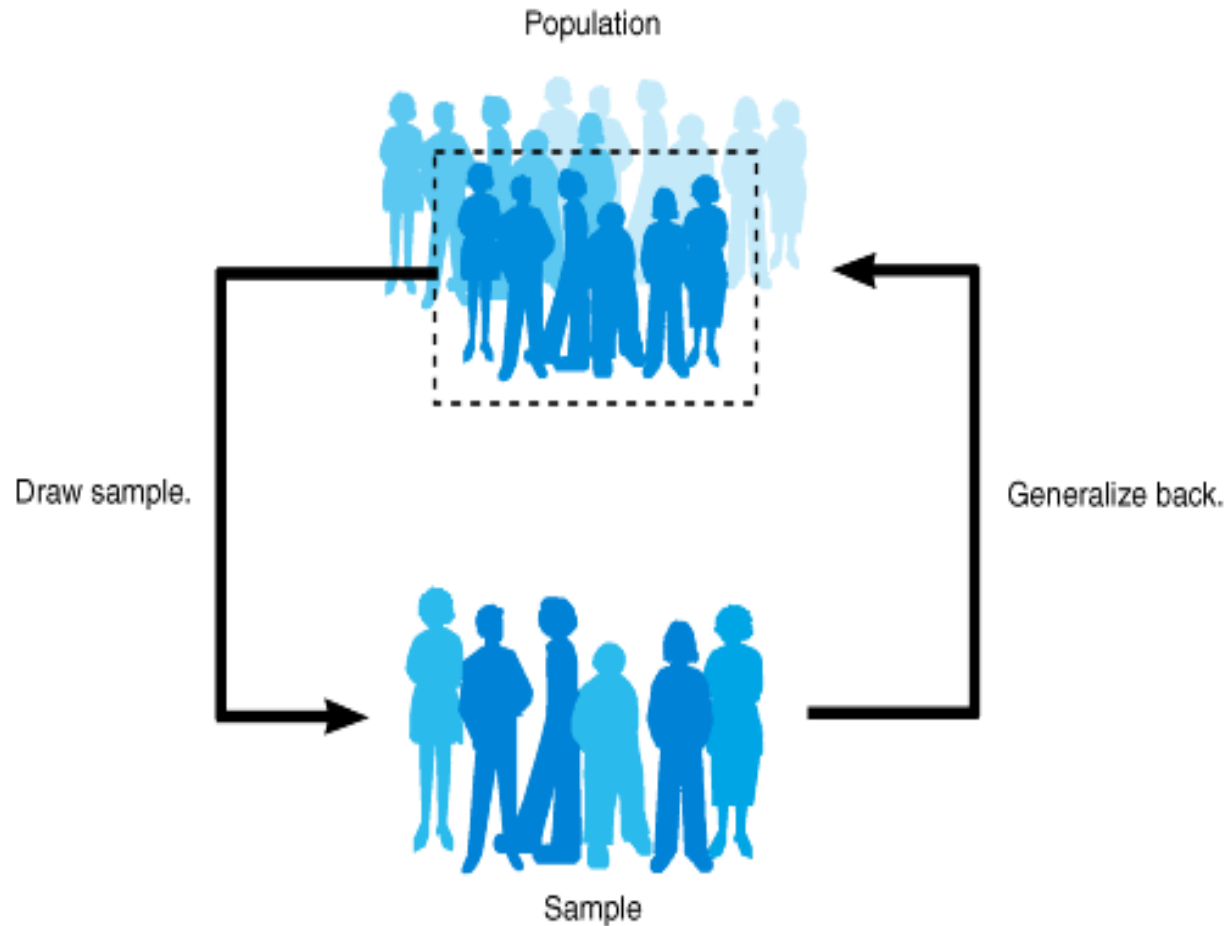 - Study the whole population?

2. Representativeness

 - How <u>representative</u> the selected cases are?

3. Casual vs. scientific sampling

I. Purpose of sampling

4. What is sampling?

Population

Draw sample.

Generalize back.

Sample

II. Sampling terminology

1. (Study/Target) Population

- All possible cases

- Specify the following:

  1) Content
  2) Unit
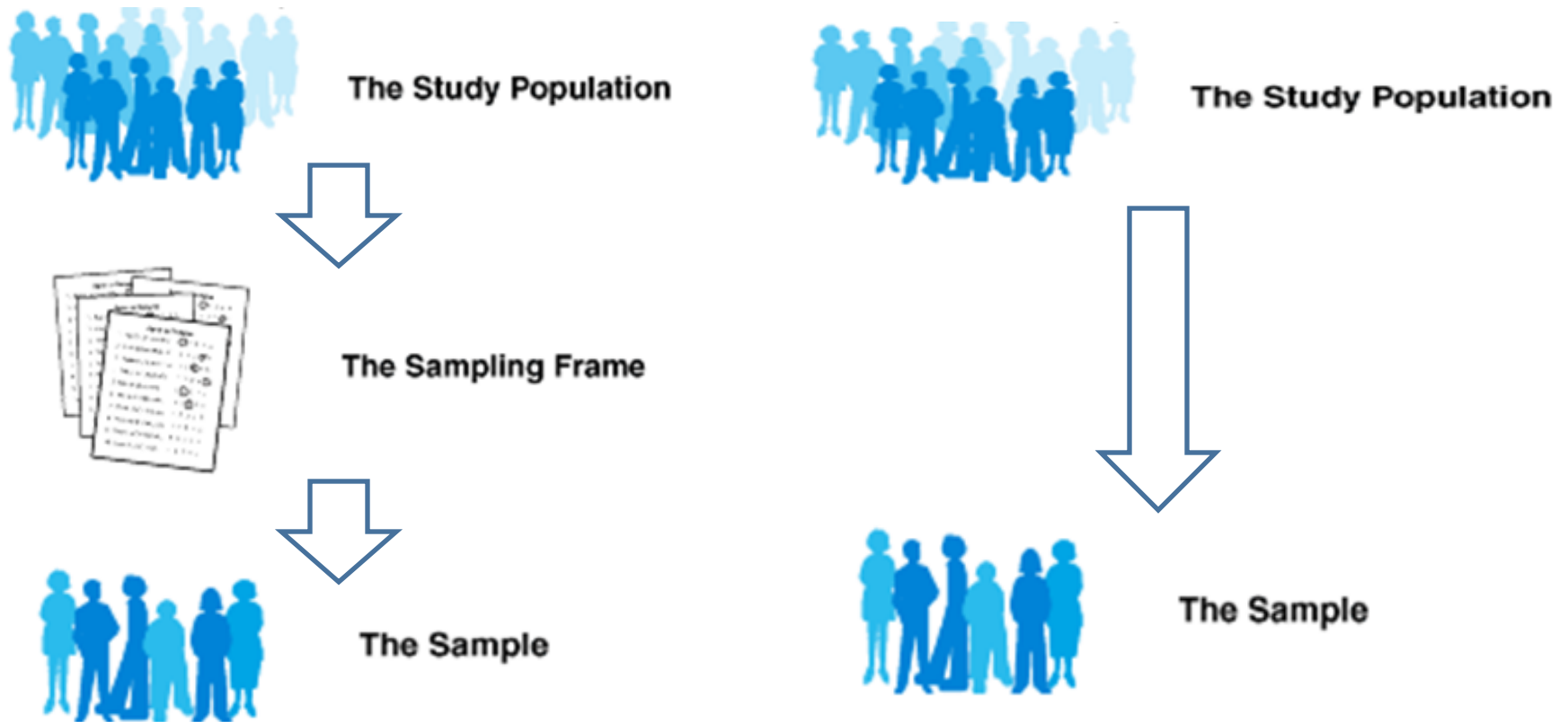 3) Extent
  4) Time

II. Sampling terminology

2. Sampling frame

- A listing of all element (cases) in a study population

- Examples: listings of telephone numbers, customers from a local electric utility

- Adequacy of sampling frame

II. Sampling terminology

3. Sample

  - The group of people you select to be in your study

III. Sampling techniques

1. Probability sampling
   - Based on probability theory
   - ***Equal probability of selection*** can ensure representativeness
   - ***Random selection***
   - Can estimate *sampling error*
   - Types of probability sampling
      1) SRS
      2) Stratified
      3) Cluster

III. Sampling techniques

1. **Probability sampling**

   1) Simple random sampling (SRS)

      ➢ Random selection using random numbers

      ➢ Simple vs. not most efficient & not good representation of subgroups

III. Sampling techniques

1. Probability sampling

   2) Stratified sampling
-     For adequate representation of subgroups
-     (1) Divide the sampling frame into homogeneous subgroups

$$\downarrow$$

(2) taking a SRS in each subgroup

III. Sampling techniques

1. **Probability sampling**

   3) Cluster sampling

   ➢ When a population is spread across a wide geographic region

   ➢ (1) Divide a population into clusters

   ↓

   (2) randomly select clusters

   ↓

   (3) measure all elements within sampled clusters.

III. Sampling techniques

2. Nonprobability sampling

- What if we can't develop a sampling frame?

- May not be much interested in generalization

- Rely on availability or judgment on selecting subjects

III. Sampling techniques

2. Nonprobability sampling

1) Convenience (availability) sampling

➢ Rely on availability

2) Purposive sampling

➢ Based on judgment or prior knowledge

III. Sampling techniques

2. Nonprobability sampling

3) Quota sampling

> ➤ Using quotas for better representation
> ➤ Construct matrix

4) Snowball sampling

> ➤ Accumulated gradually in a snowball fashion
> ➤ When to use?

IV. Determining sample size

➢ # of variables * minimum # of cases per variables

V. Sensitivity to diversity in sampling

➢ Gender bias

➢ Cultural sensitivity

Future Weeks

Next (week 8): Survey Research

Week 9: Exam

Week 10: Spring break

Week 11: Single Case Designs