Sampling

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The Objectives

- **What is Quantitative Sampling**

- **Define the concepts of samples and population**

- **Types of Sample**

- **How to determine the numbers of sample**

- **What is Qualitative Sampling**

Quantitative Sampling

Sampling: The process of selecting a number of participants for a study.

If a sample is well-selected the results will be *generalizable* to the population.
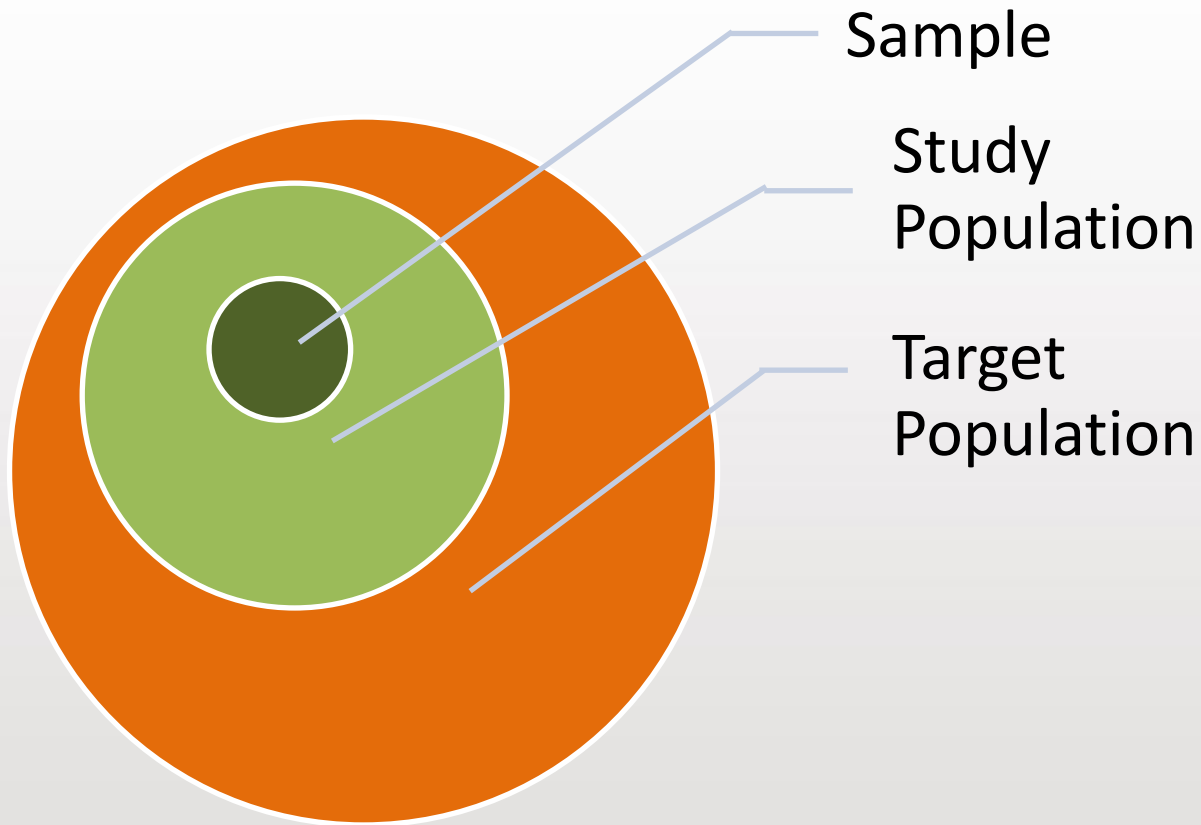
Defining a Population

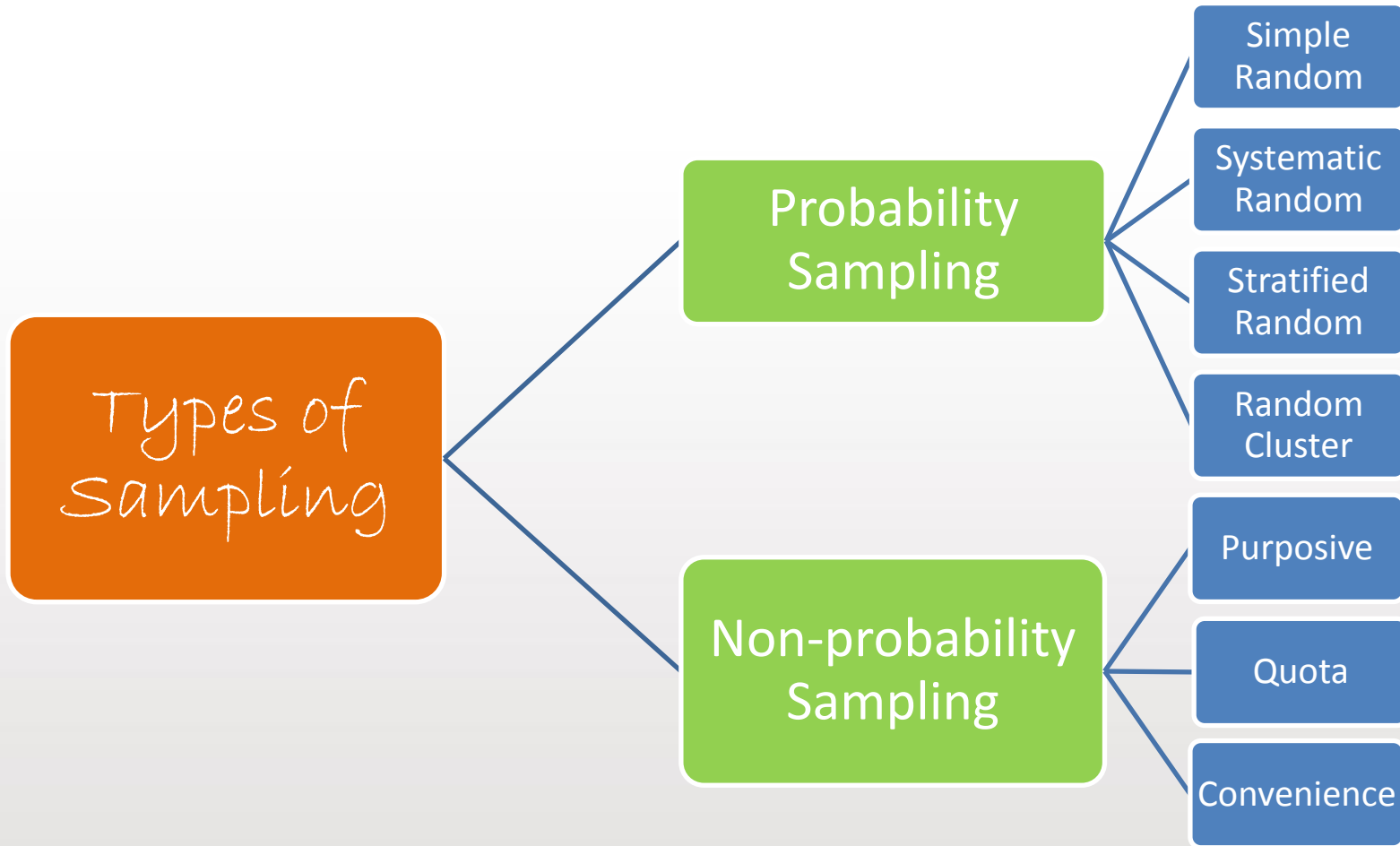Populations is any size and cover large of geographical distances.

(Malay) + Chine(s)e + Ind(ian) = Malaysian =

Populations and Samples

Sample

Study Population

Target Population

Types of Sampling

- Probability Sampling
  - Simple Random
  - Systematic Random
  - Stratified Random
  - Random Cluster
- Non-probability Sampling
  - Purposive
  - Quota
  - Convenience

Probability Sampling

…….it would be nice to just observe ALL of the PEOPLE
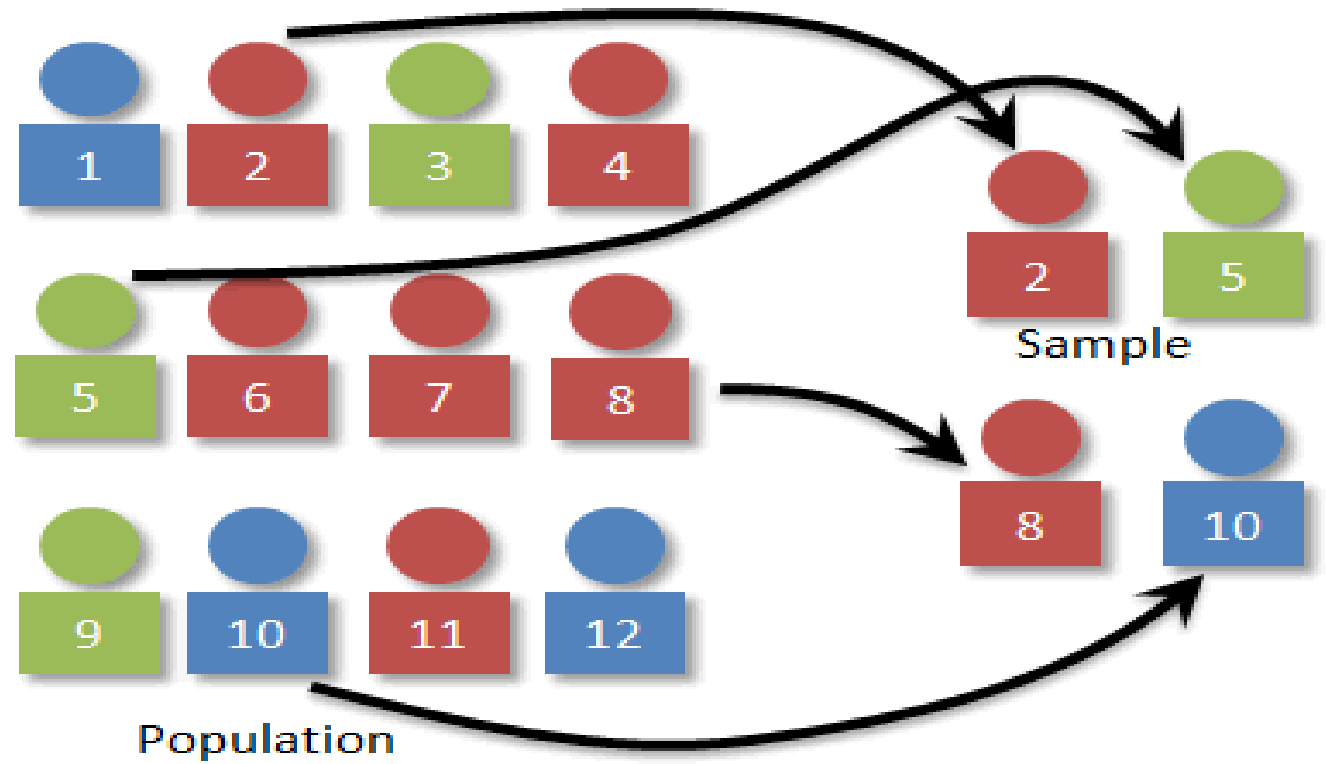

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Simple Random Sampling

- **All individuals in the defined population have an equal and independent chance of being selected for the sample.**

- **Random sampling is the best way to possibly obtain a representative sample.**

- **The Probability = n/N**

   **n=sample size, N = population**

Simple Random Sampling

Sample

Population

Stratified Sampling

- **Stratified sampling guarantees desired representation of relevant subgroups within the sample.**

- **Identified subgroups are represented in the sample in the same proportion as in the population.**

- **Stratified sampling can be used to select equal-sized, non proportional, samples from subgroups when subgroup comparisons are important.**
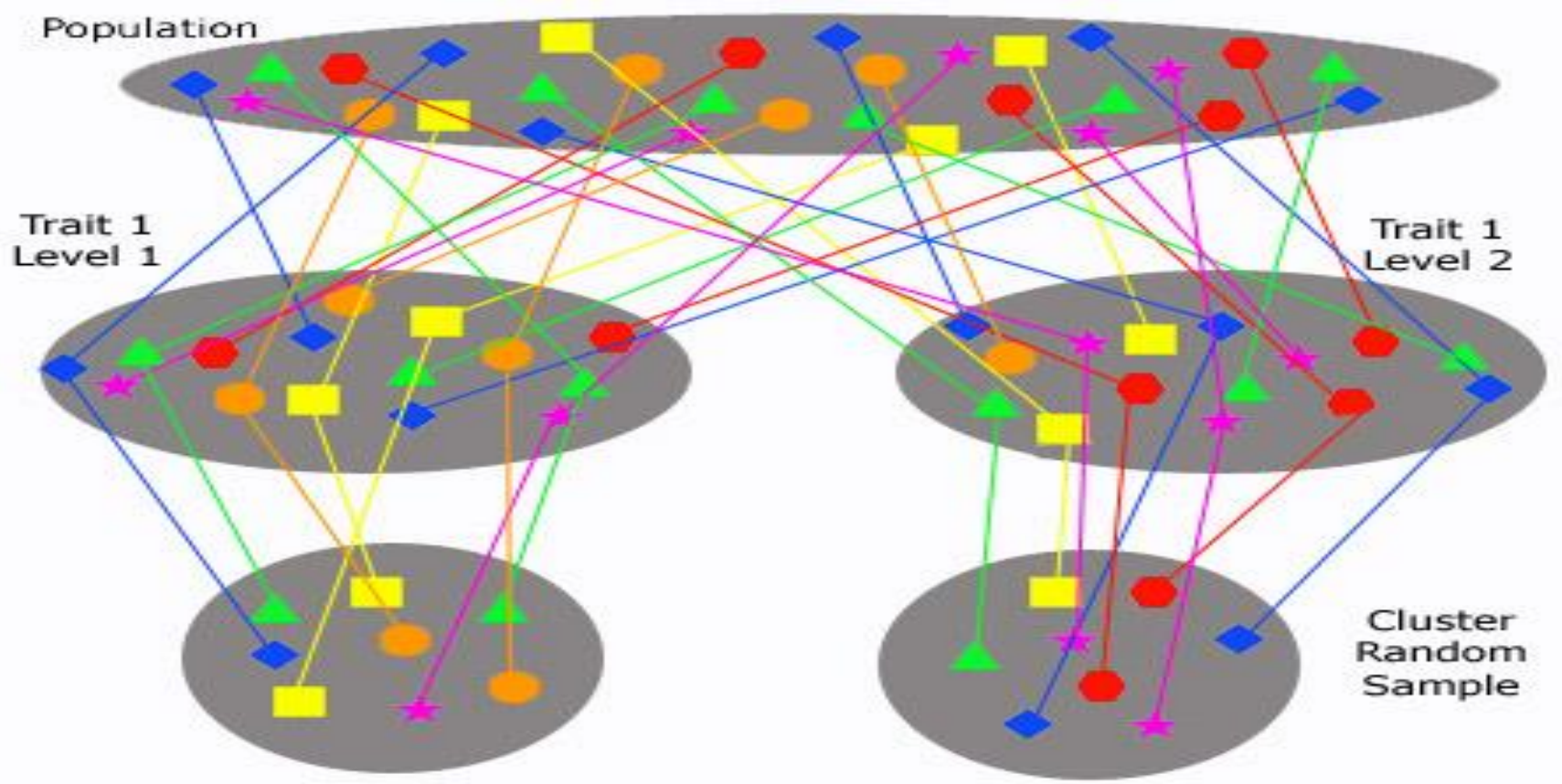
Stratified Sampling
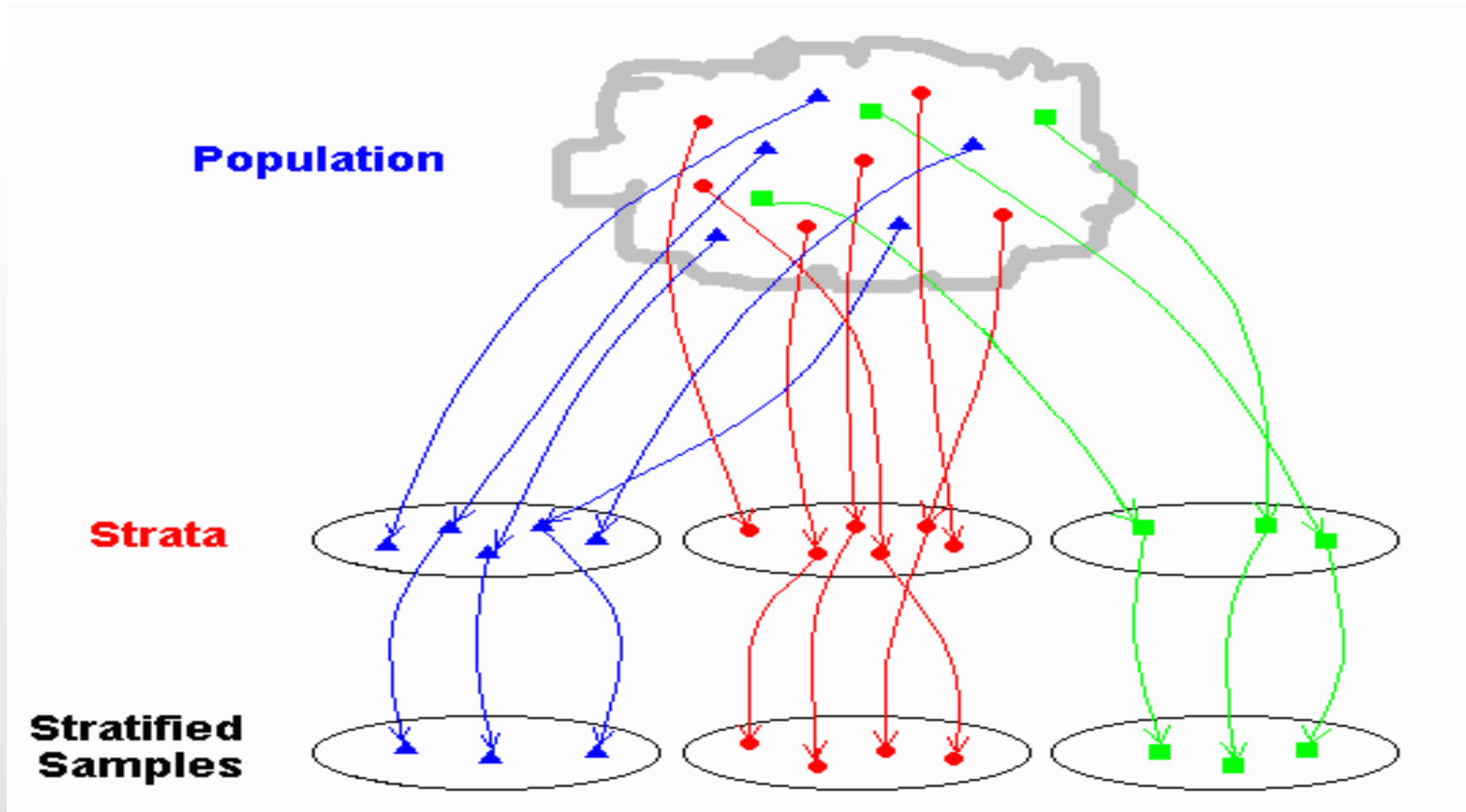
Cluster Sampling

- Instead of individuals, groups are randomly selected.

- Cluster sampling used when it is not possible to list all members of a population or the population is large.

Cluster Random Sampling

# Systematic Sampling

- **In systematic sampling we select every Kth individual from a list**

- **The list includes all the members of a population**

- **K is determined by dividing the number of individuals by the number of participants desired in a sample**

- **Randomly ordered lists can be used in systematic sampling**

Systematic Sampling

Population

Sample (every 3rd person selected)
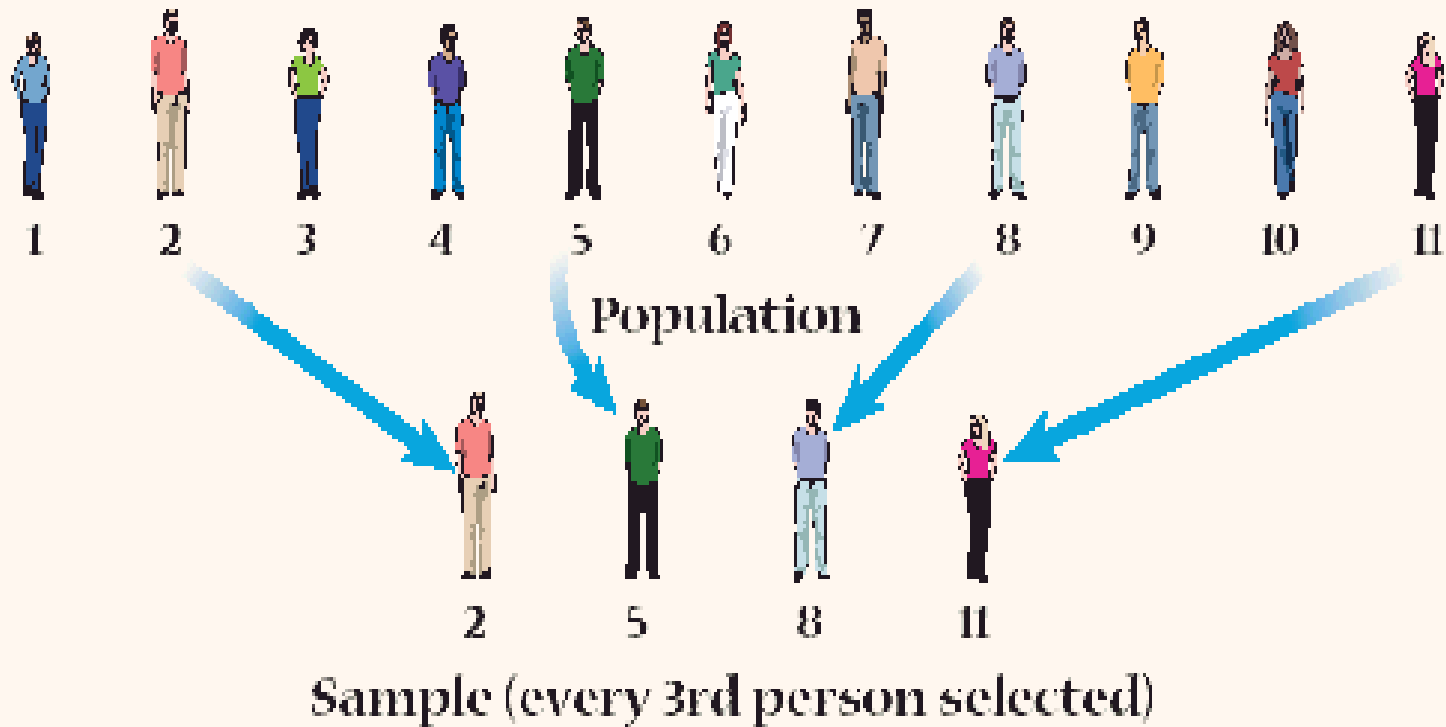
Determining Sample Size

- It is not easy to determine how large a sample should be

- If the sample is too small it will limit generalizability

- If a population is very large, you need less percentage of the population for your sample to be representative

- If the population is small, sample the entire population

Krejcie & Morgan Table

Table for Determining Sample Size for a Given Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
        "S" is sample size.

Source: Krejcie & Morgan, 1970

Non-Probability Sampling

- **Non-probability sampling represents a group of sampling techniques that help researchers to select units from a population that they are interested in studying.**

- **A core characteristic of non-probability sampling techniques is that samples are selected based on the subjective judgement of the researcher**

- **Researchers can not use random sampling**

Convenience Sampling

Convenience sampling selects whoever is available

Convenience sampling introduces bias

Those available may not be representative

Purposive

Purposive sampling is also called judgment sampling

Purposive sampling entails selecting a sample believed to be representative

Quota

- – **Quota sampling occurs when the researcher selects a sample based on a required number of individuals with particular characteristics**
- – **Quota sampling is often used in wide-scale survey research**
- – **Bias is introduced in several ways when quota sampling is used, including through accessibility**

Sampling in Qualitative Research

Sampling in Qualitative Research

Usually : small non-random samples

Concern: measure attributes and relationships in a population

Aim: to discover meaning, uncover multiple realities, therefore generalization is not a guiding criteria
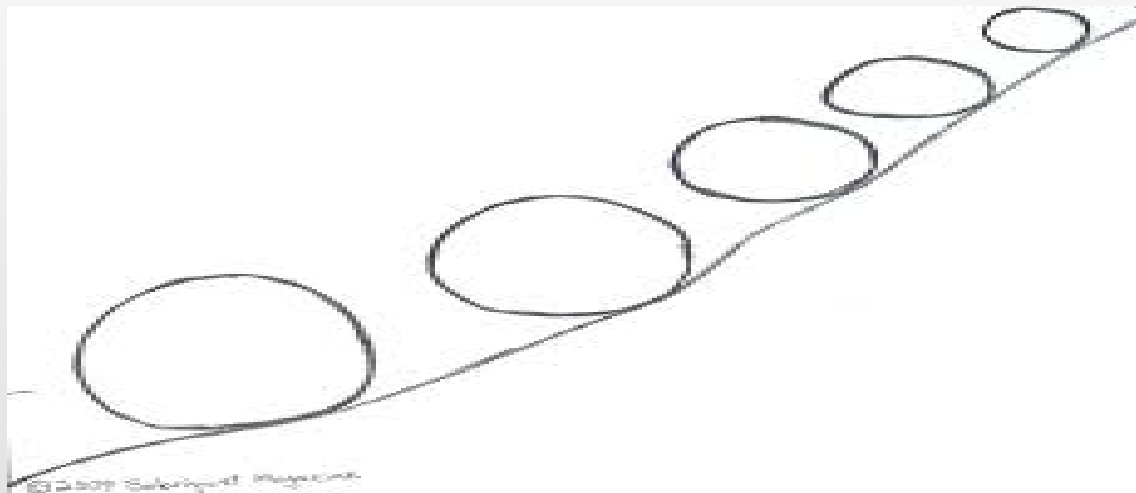
Types of Qualitative sampling

- **Convenience sampling**

- **Snowball sampling**

- **Purposeful sampling**

Snowball Sampling

- **Find a few people that are relevant to your topics**

- **Ask them to refer you more of them**

Sample size

No firm establishment of criteria or rules

Should be determined on the basis of informational needs

DATA SATURATION: sampling to the point at which no new information is obtained and redundancy is achieved