

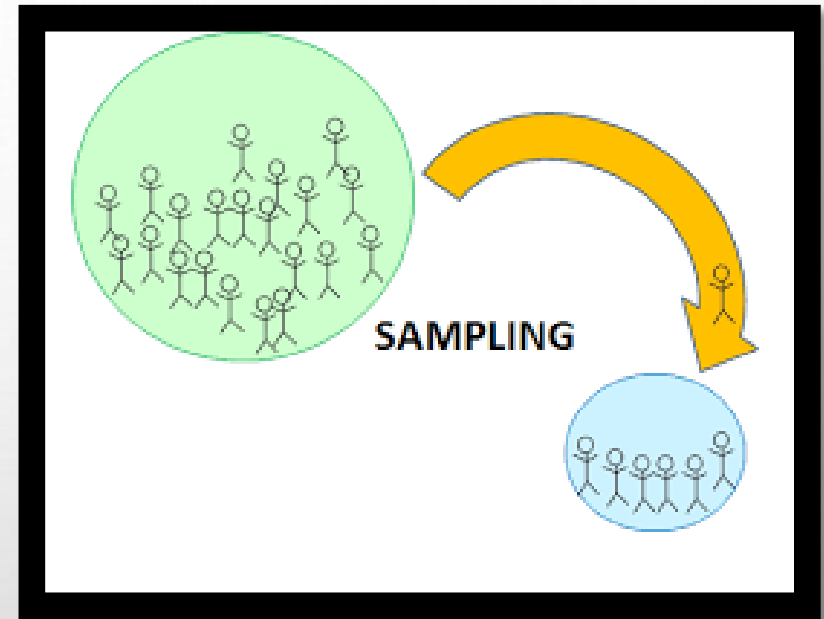
The background of the slide is a light gray gradient. It is decorated with numerous realistic water droplets of various sizes. Some droplets are large and prominent, while others are small and subtle. They are scattered across the slide, with a higher concentration in the top-left and bottom-right corners. The droplets have highlights and shadows, giving them a three-dimensional appearance.

DATA AND SAMPLING DISTRIBUTION

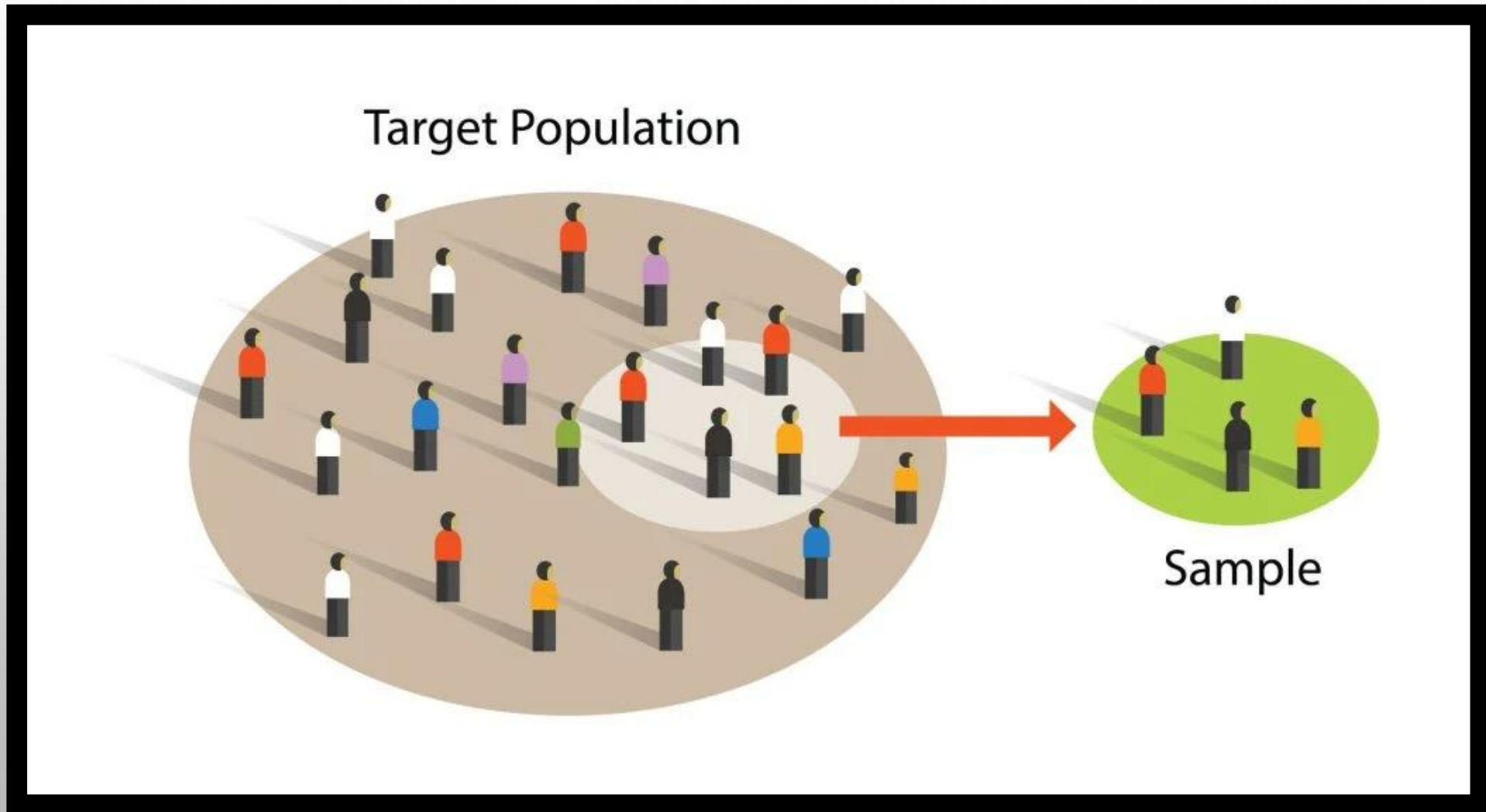
PROF. SARALA MARY

WHAT IS SAMPLING?

Sampling is the process of selecting a representative Group from the population under study.



PURPOSE OF SAMPLING



TYPES OF SAMPLING

- BIASED SAMPLE
 - CONVENIENCE SAMPLE
 - VOLUNTARY RESPONSE SAMPLE
- UNBIASED SAMPLE
 - STRATIFIED RANDOM SAMPLING
 - MULTISTAGE SAMPLING
 - SIMPLE RANDOM SAMPLING

BIASED SAMPLE

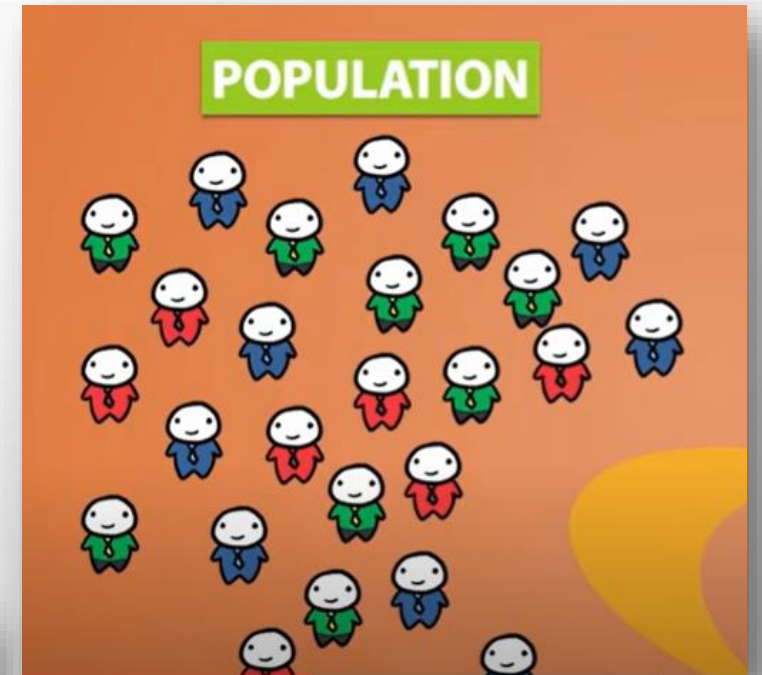
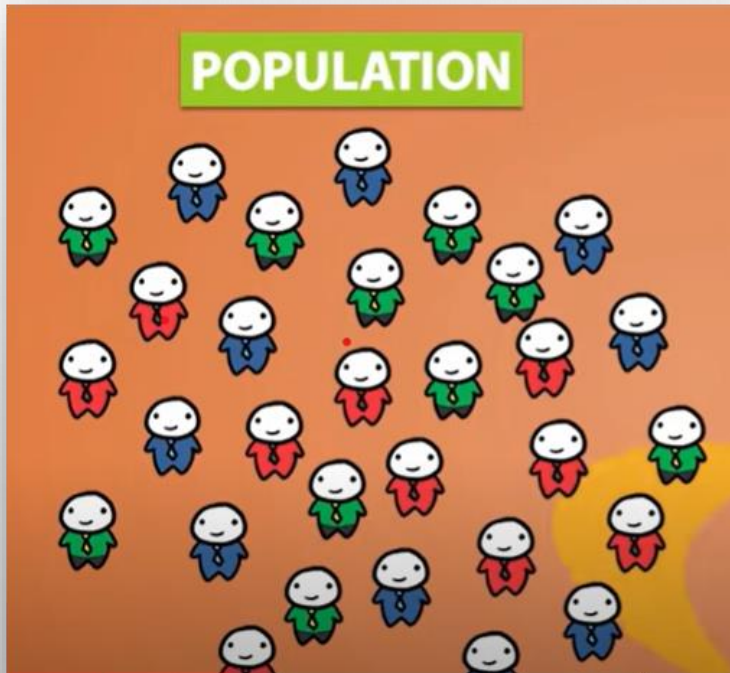
- IT OCCURS WHEN ONE OR MORE PARTS OF THE POPULATION ARE FAVOURED OVER OTHERS.

TYPES OF BIASED SAMPLE

- CONVENIENCE SAMPLE
- VOLUNTARY RESPONSE SAMPLE

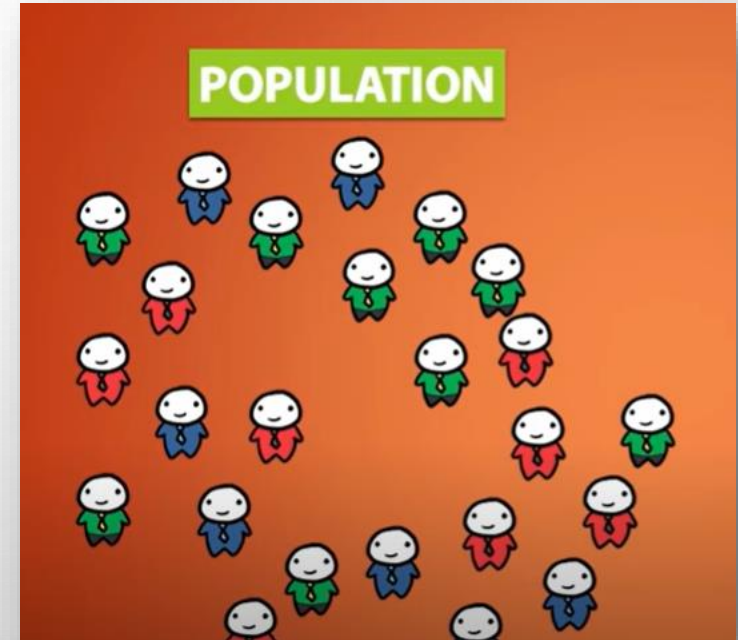
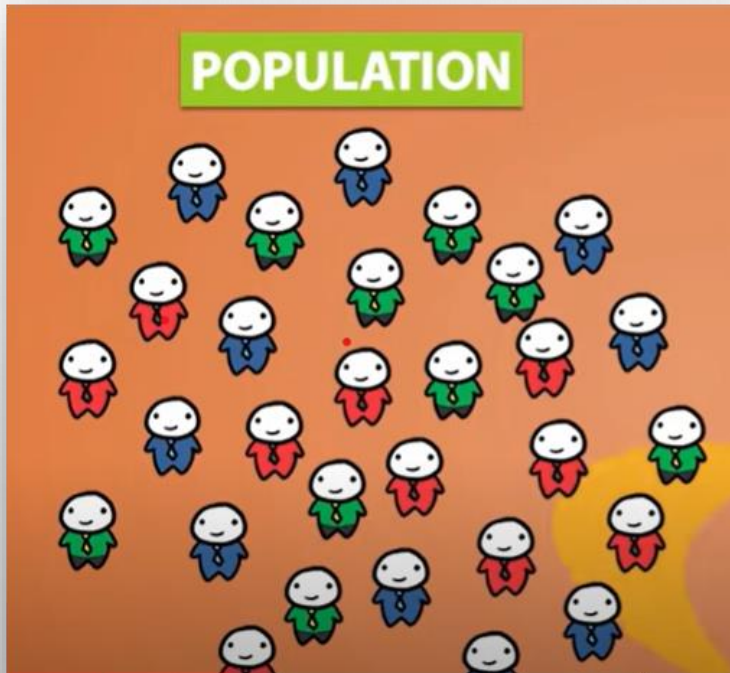
CONVENIENCE SAMPLE

- IT ONLY INCLUDES PEOPLE WHO COULD REACH.



VOLUNTARY RESPONSE SAMPLE

- IT CONSISTS OF PEOPLE THAT HAVE CHOSEN TO INCLUDE THEMSELVES



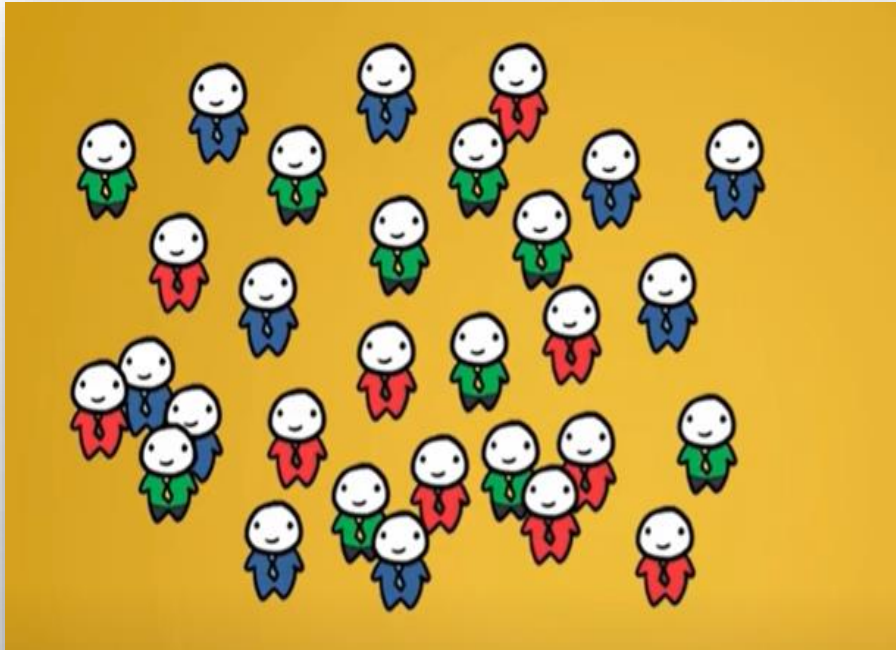
UNBIASED SAMPLE

- A GOOD SAMPLE IS ONE THAT IS REPRESENTATIVE OF THE ENTIRE POPULATION THAT GIVES “EACH” THING AN EQUAL CHANCE OF BEING CHOSEN.

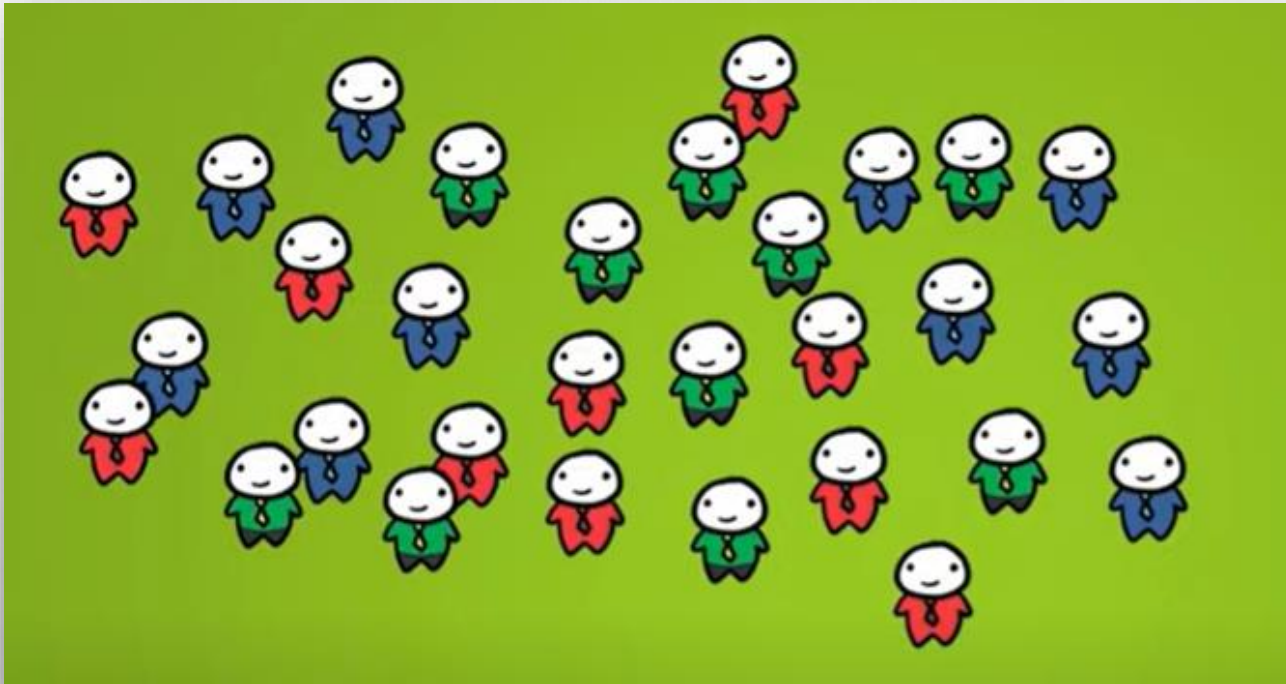
TYPES OF UNBIASED SAMPLE

- STRATIFIED RANDOM SAMPLING
- MULTISTAGE SAMPLING
- SIMPLE RANDOM SAMPLING

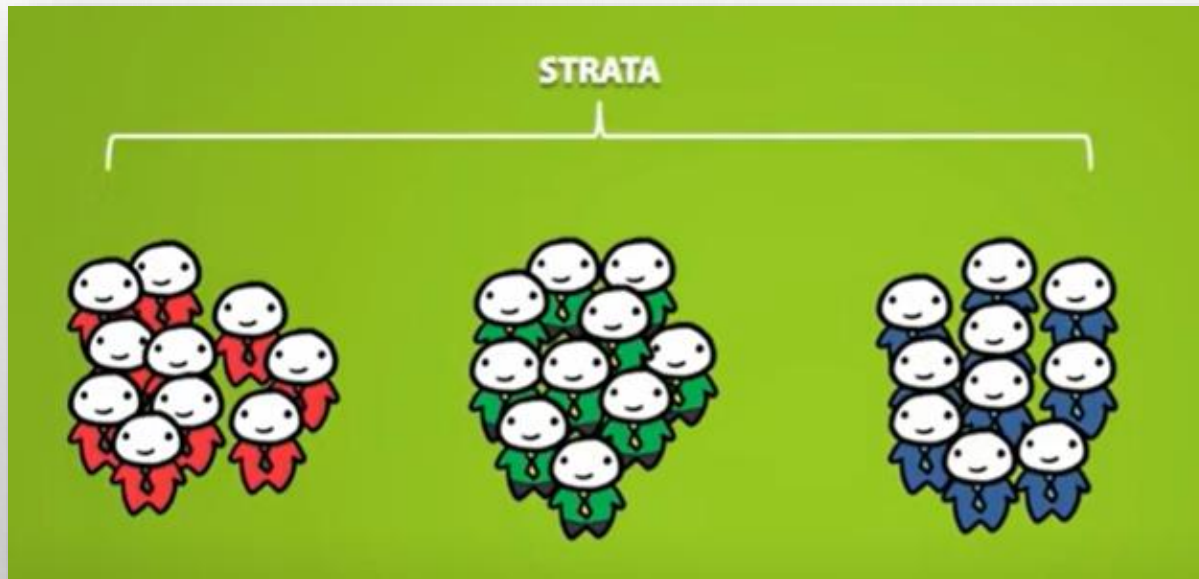
SIMPLE RANDOM SAMPLING



STRATIFIED RANDOM SAMPLING

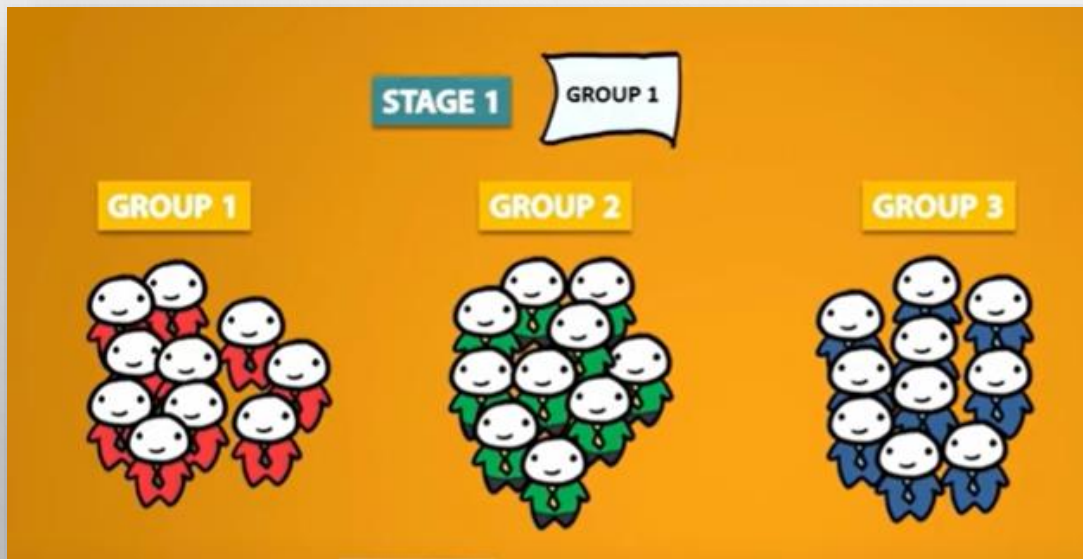


STRATIFIED RANDOM SAMPLING



MULTISTAGE SAMPLING

- USE COMBINATION OF TWO OR MORE STAGES.



BIAS

- STATISTICAL BIAS REFERS TO MEASUREMENT OR SAMPLING ERRORS THAT ARE SYSTEMATIC AND PRODUCED BY THE MEASUREMENT OR SAMPLING PROCESS.
- ERRORS DUE TO RANDOM CHANCE, AND ERRORS DUE TO BIAS.
- AN UNBIASED PROCESS WILL PRODUCE ERROR
- IN BIASED PROCESS THERE IS ERROR AND IT IS BIASED ALSO

EXAMPLE

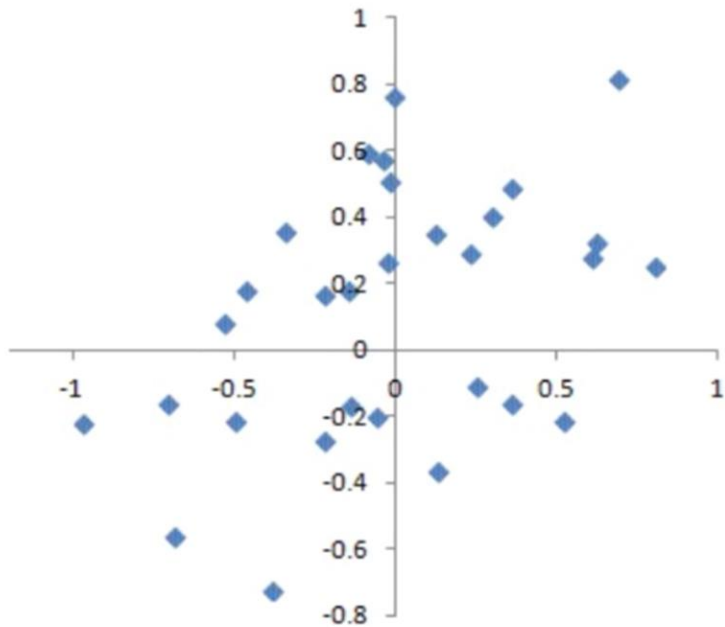


Figure 2-2. Scatterplot of shots from a gun with true aim

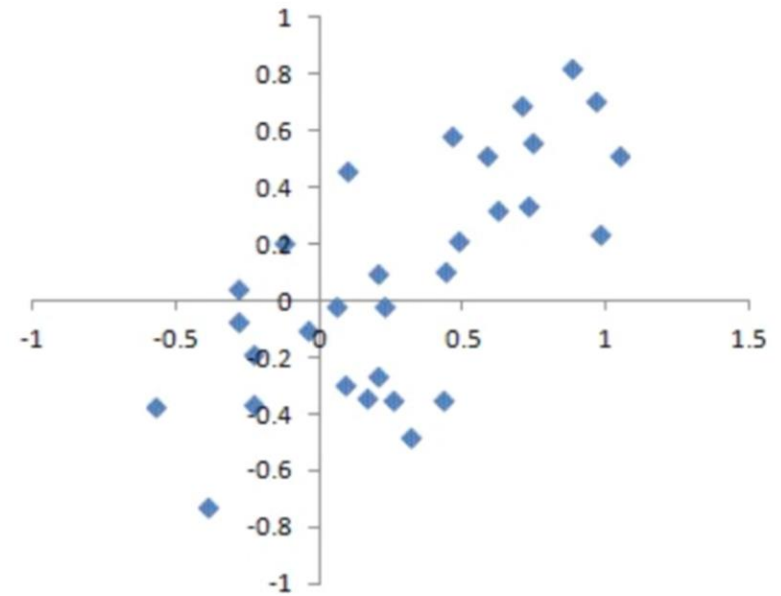


Figure 2-3. Scatterplot of shots from a gun with biased aim

SELECTION BIAS

- SELECTION BIAS REFERS TO THE PRACTICE OF SELECTIVELY CHOOSING DATA — CONSCIOUSLY OR UNCONSCIOUSLY — IN A WAY THAT LEADS TO A CONCLUSION THAT IS MISLEADING.
- DATA SNOOPING - EXTENSIVE HUNTING THROUGH DATA IN SEARCH OF SOMETHING INTERESTING.

CENTRAL LIMIT THEOREM

- IT SAYS THAT THE MEANS DRAWN FROM MULTIPLE SAMPLES WILL RESEMBLE THE FAMILIAR BELL-SHAPED NORMAL CURVE (NORMAL DISTRIBUTION), EVEN IF THE SOURCE POPULATION IS NOT NORMALLY DISTRIBUTED.

SAMPLING DISTRIBUTION OF A STATISTIC

- THE TERM SAMPLING DISTRIBUTION OF A STATISTIC REFERS TO THE DISTRIBUTION OF SOME SAMPLE STATISTIC, OVER MANY SAMPLES DRAWN FROM THE SAME POPULATION.