

Classroom Quiz: Cluster Sampling

Part A: Multiple Choice (Pick the best answer)

1. In cluster sampling, clusters are usually:
 - a) Naturally occurring groups in the population
 - b) Equal-sized artificial groups created by the researcher
 - c) Always geographical areas only
 - d) Groups with identical characteristics
2. Which of the following is true about cluster sampling?
 - a) It is always more precise than simple random sampling
 - b) It is cheaper and easier when population is spread out
 - c) It requires the researcher to know the entire population list
 - d) It eliminates sampling error completely
3. Compared to stratified sampling, cluster sampling usually results in:
 - a) Lower sampling error
 - b) Higher sampling error
 - c) Exactly the same sampling error
 - d) No difference

Part B: Short Answer

4. Give one real-world example of when you would use cluster sampling in a survey.
5. Explain in one sentence the difference between cluster and stratified sampling.

Part C: Problem-Solving

6. A researcher wants to estimate the average household income in a city with 10,000 households. She divides the city into 200 clusters (each with 50 households). She randomly selects 20 clusters and surveys all households in them.
 - How many households are included in the sample?
 - What type of cluster sampling is this: one-stage or two-stage?
7. Suppose a country has 1,000 schools (each with 500 students). A researcher wants to survey students using two-stage cluster sampling:
 - Stage 1: Randomly select 50 schools.
 - Stage 2: From each selected school, randomly select 20 students.
 - What is the total sample size?
 - Why might two-stage sampling be preferred here instead of one-stage?