Cluster Sampling [1]

In cluster sampling, instead of selecting all the subjects from the entire population right off, the researcher takes several steps in gathering his sample population.
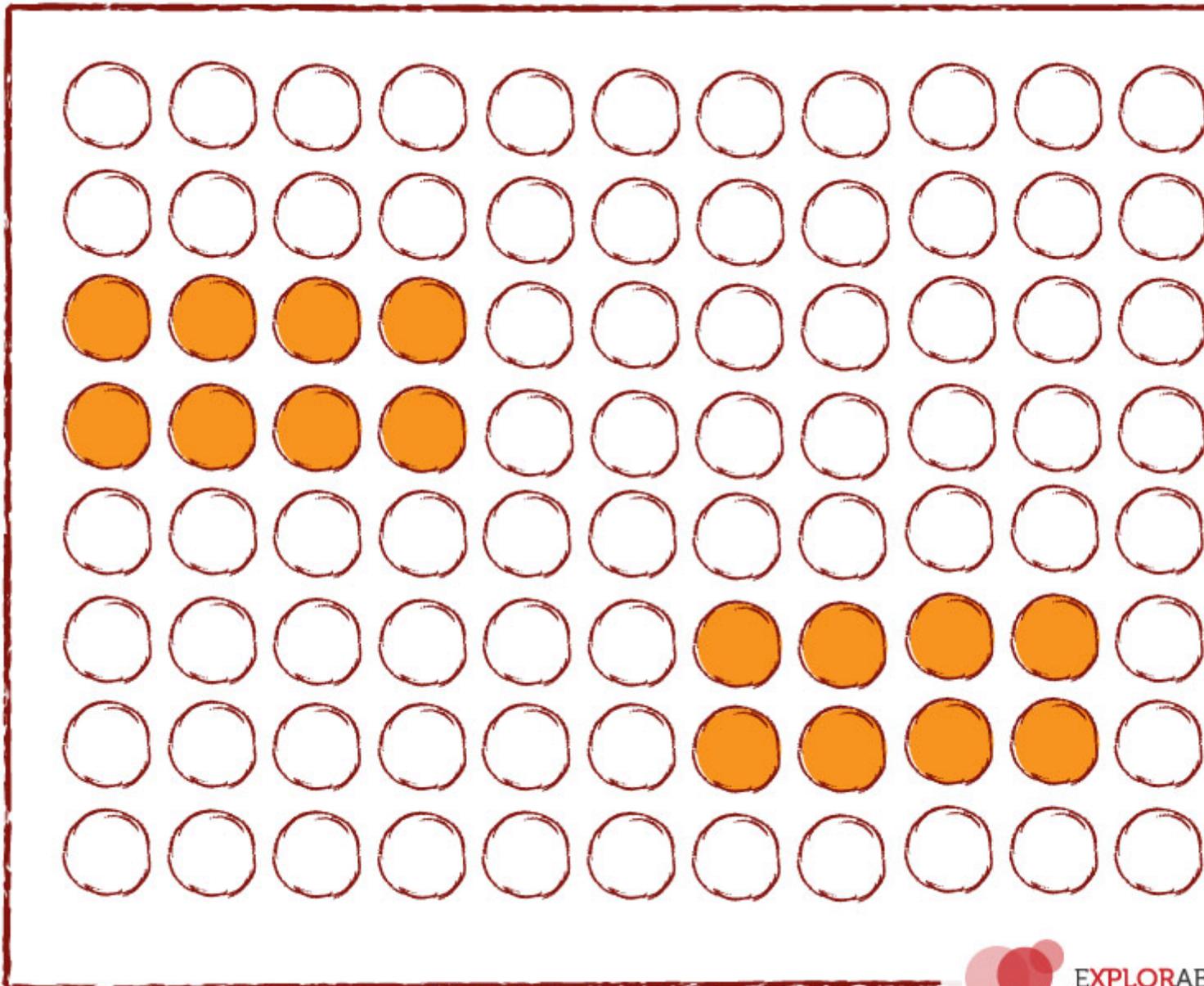
Cluster Sampling

First, the researcher selects groups or clusters, and then from each cluster, the researcher

selects the individual subjects by either <u>simple random</u> [3] or <u>systematic random sampling</u> [4]. The researcher can even opt to include the entire cluster and not just a subset from it.

The most common cluster used in research is a geographical cluster. For example, a researcher wants to survey academic performance of high school students in Spain.

1. He can divide the entire population (population of Spain) into different clusters (cities).
2. Then the researcher selects a number of clusters depending on his research through simple or systematic random sampling.
3. Then, from the selected clusters (randomly selected cities) the researcher can either include all the high school students as subjects or he can select a number of subjects from each cluster through simple or systematic random sampling.

The important thing to remember about this <u>sampling technique</u> [5] is to give all the clusters equal chances of being selected.

Types of Cluster Sample

One-Stage Cluster Sample

Recall the example given above; one-stage cluster sample occurs when the researcher includes all the high school students from all the randomly selected clusters as sample.

Two-Stage Cluster Sample

From the same example above, two-stage cluster sample is obtained when the researcher only selects a number of students from each cluster by using simple or systematic random sampling.

Difference Between Cluster Sampling and Stratified Sampling

The main difference between cluster sampling and stratified sampling lies with the inclusion of the cluster or strata.

In stratified random sampling, all the strata of the population is sampled while in <u>cluster sampling</u> [6], the researcher only randomly selects a number of clusters from the collection of clusters of the entire population. Therefore, only a number of clusters are sampled, all the other clusters are left unrepresented.

Advantages and Disadvantages of Cluster Sampling

- This sampling technique is cheap, quick and easy. Instead of <u>sampling</u> [7] an entire country when using simple random sampling, the researcher can allocate his limited resources to the few randomly selected clusters or areas when using cluster samples.
- Related to the first advantage, the researcher can also increase his sample size with this technique. Considering that the researcher will only have to take the sample from a number of areas or clusters, he can then select more subjects since they are more accessible.

- From all the different type of <u>probability sampling</u> [8], this technique is the least representative of the population. The tendency of individuals within a cluster is to have similar characteristics and with a cluster sample, there is a chance that the researcher can have an overrepresented or underrepresented cluster which can skew the results of the study.
- This is also a probability sampling technique with a possibility of high sampling error. This is brought by the limited clusters included in the sample leaving off a significant proportion of the population unsampled.

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