Population Sampling Techniques

Population sampling is the process of taking a subset of subjects that is representative of the entire population. The sample must have sufficient size to warrant statistical analysis.

Sampling is done usually because it is impossible to test every single individual in the population. It is also done to save time, money and effort while conducting the research.

Still, every researcher must keep in mind that the ideal scenario is to test all the individuals to obtain reliable, valid and accurate results. If testing all the individuals is impossible, that is the only time we rely on sampling techniques.

Performing population sampling must be conducted correctly since errors can lead to inaccurate and misleading data.

Types of Sampling

Non-Probability Sampling

In this type of population sampling, members of the population do not have equal chance of being selected. Due to this, it is not safe to assume that the sample fully represents the target population. It is also possible that the researcher deliberately chose the individuals that will participate in the study.

Non-probability population sampling method is useful for pilot studies [1], case studies [2], qualitative research [3], and for hypothesis development [4].

This sampling method is usually employed in studies that are not interested in the parameters of the entire population. Some researchers prefer this sampling technique because it is cheap, quick and easy.

Probability Sampling

In probability sampling, every individual in the population have equal chance of being selected as a subject for the research.

This method guarantees that the selection process is completely randomized and without bias [5].

The most basic example of probability sampling is listing all the names of the individuals in the population in separate pieces of paper, and then drawing a number of papers one by one from the complete collection of names.

The advantage of using probability sampling is the accuracy of the statistical methods [6] after the experiment. It can also be used to estimate the population parameters since it is representative of the entire population. It is also a reliable method to eliminate sampling bias.

Non-Probability Sampling [7]	Convenience Sampling [8]
	Consecutive Sampling [9]
	Quota Sampling [10]
	Judgmental Sampling [11]
	Snowball Sampling [12]
Probability Sampling [13]	Simple Random Sampling [14]
	Systematic Sampling [15]
	Stratified Sampling [16]
	Cluster Sampling [17]
	Disproportional Sampling [18]

Steps in Recruiting the Appropriate Research Sample

1. First, the researcher must clearly define the target population.

In research [19], population is a precise group of people or objects that possesses the characteristic that is questioned in a study. To be able to clearly define the target population, the researcher must identify all the specific qualities that are common to all the people or objects in focus.

A population can be as simple as all the citizens of California or it can be specific like all male 17-year old high school students with asthma who have been taking bronchodilators since 12 years of age.

2. Define the accessible population considering the researcher's time, budget and workforce.

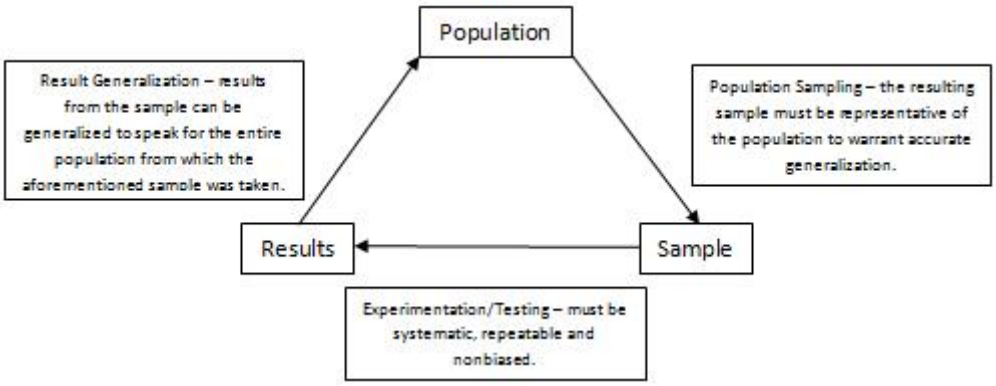
   This process will help the researchers grasp a concrete idea pertaining to the sample that they can obtain from the population.

   If the researcher has plenty of time, funds and workforce, he can opt to conduct the study using a completely randomized sample but if the time money and workforce is limited, the researcher can opt to use convenience sampling [8].

   But still, the type of population sampling must depend on the research question [20] and design.

3. Allocate the available money, time and workforce for recruitment.

Research Triad



Result Generalization

Results from the sample can be generalized [21] to speak for the entire population from which the aforementioned sample was taken.

Population Sampling

The resulting sample must be representative of the population to warrant accurate generalization.

Experimentation/testing

Should be systematic, repeatable [22] and nonbiased [5].

Source URL: https://explorable.com/population-sampling

Links
[1] https://explorable.com/pilot-study
[2] https://explorable.com/case-study-research-design
[3] https://explorable.com/qualitative-research-design
[4] https://explorable.com/research-hypothesis
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