Sample Group

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In statistics, a sample group can be defined as a subset of a population. The population, or target population, is the total population about which information is required.

Ideally, this is a population at risk. The "study population" is the population from which sample is to be drawn. Commonly, the population is found to be very large and in any research study, studying all population is often impractical or impossible. Therefore, sample unit gives researchers a manageable and representative subset of population.

Sampling Frame > Sampling Unit > Sampling Fraction

Before a sample is taken, members of study population need to be identified by constructing a list called a sampling frame. Each member of sampling frame is called sampling unit.

For example, someone may want to know details about shopping trends of people coming to a particular grocery store on Sundays. So people coming to that grocery store on Sunday forms a sampling frame and each customer is a sampling unit.

The sampling fraction is the ratio of sample size to study population size. For example if you choose 10 customers out of total 1000 coming to that grocery store, than the sampling fraction would be 1%.

The sampling units may be individuals or they may be in groups. For example, in a particular study involving animals, one can select individual animals or groups of animals like in herds, farms, or administrative regions.

Types of Sampling

Now how to get our desired sample group [1]? Well, there are two types of sampling [2]:

1. Non-Probability Sampling

In non-probability sampling [3], the choice of sample group is left to the researcher and thus element of bias always shows up in such studies.

2. Probability Sampling

In probability sampling [4], the selection of the sample is made using deliberate, unbiased process, so that each sample unit in a group has an equal chance of being selected. This forms the basis of random sampling [5].

Probability sampling is most commonly used in experimental research [6]. Randomization is performed to choose samples providing each sample an equal chance of being selected and thus minimizing or eliminating bias [7] altogether.

Links
[1] http://en.wikipedia.org/wiki/Statistical_sample
[2] https://explorable.com/what-is-sampling
[3] https://explorable.com/non-probability-sampling
[4] https://explorable.com/probability-sampling
[5] https://explorable.com/simple-random-sampling
[6] https://explorable.com/experimental-research
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