

# Sampling Decision

## Introduction

Sampling is one of the key decisions in research process; for example, a leading consumer product company faces competition for its tea brand. The sales team strongly felt, the company is losing its market share to its competitors, particularly in the adjacent districts of the state capital. Adjacent districts of the state capital are always potential market for any tea/coffee manufacturers, since it is easy to go and work. The company wants to undertake a market research in this area. If we assume, the adjacent districts population is roughly about 50, 00,000 people, how many people should the company study to draw meaning conclusion?

Obviously, the company cannot meet all the people in the districts and conduct the study and draw meaningful inferences. Marketing research projects like this usually have budget and time constraints. Neither, it would not be possible to contact the whole population within a short period of time, nor adequate resources [both man power and financial support] to undertake the study. Thus, sampling is a handy tool, which cuts costs, reduces manpower requirements, and gathers vital information quickly.

## Concept of Sampling

A population (finite group) or universe (infinite group) is any complete group sharing some common set of characteristics. Sample is a subset or some part of a larger population. Sampling involves using a small number of items or parts or portion of the population to make conclusions regarding the whole population. Thus, the purpose of sampling is to estimate some unknown characteristic of the population.

Thus, sampling is the process of selecting units, which may consist of people / organizations, from a population of interest so that by studying the sample we may fairly generalize our results back to the population from which they are chosen.

## Measures in Sampling

- **Response** -It is a specific measurement value that a sampling unit supplies. For example, if a respondent is responding to a survey instrument and gives a response of '4'. Such responses we collect for the sample.

- **Statistic** -Based on the responses, we compute a value for our entire sample. That value is called a statistic. There are a wide variety of statistics we can use — mean, median, mode, and so on.
- **Parameter** -If you measure the entire population and calculate a value like a mean or average, we call it a parameter of the population.
- **Population element**- refers to and individual member of the population.
- **Census**- is an investigation of all the individual elements making up the population - a total enumeration rather than selection of portion from the whole population.

### **Population Types**

You should also know the distinction between the population you would like to generalize to, and the population that will be accessible to you. We will call the former the theoretical population and the latter the accessible population.

- *Theoretical population:* This is the population for concern for the researcher, for which he/she is trying to generalize the research findings.
- *Accessible population:* These are the population elements, which the researcher feels possess universe characteristics, and can be claimed as a representation of the ‘true’, theoretical population, and within a reasonable effort, he/she can collect data

### **Target Population and Sampling Frame**

Another concept is the target population. Once the decision to sample has been made, the first question concerns identifying the target population. What is the relevant population? The following key parameters might be more useful to define the target population accurately.

Well thought out research objectives

Available alternatives for data collection

Knowledge of market size and characteristics

Considerations regarding the appropriate sampling unit

Identification of what is to be excluded

The possibility of repeating survey with them- reproducible

Convenience

**Sampling Frame** -A sampling frame is a list of elements from which the sample may be drawn. The sampling frame is also called the working population, because it provides the list that can be operationally worked with.

**Target population** – It is the population the researcher would like to study for the given objective.

**Sampling frame** – It is the enumerated list of target population elements that can be identified and accessed for data collection.

**Sampling frame error**- The discrepancy between the definition of the population and a sampling frame is the first potential source of error associated with sample selection.