

Stratified Random Sampling: Definition:

Stratified random sampling is a type of probability sampling using which a research organization can branch off the entire population into multiple non-overlapping, homogeneous groups (strata) and randomly choose final members from the various strata for research which reduces cost and improves efficiency. Members in each of these groups should be distinct so that every member of all groups get equal opportunity to be selected using simple probability. This sampling method is also called “random quota sampling”.

ge, socioeconomic divisions, nationality, religion, educational achievements and other such classifications fall under stratified random sampling.

Let’s consider a situation where a research team is seeking opinions about religion amongst various age groups. Instead of collecting feedback from 326,044,985 U.S citizens, random samples of around 10000 can be selected for research. These 10000 citizens can be divided into strata according to age,i.e, groups of 18-29, 30-39, 40-49, 50-59, and 60 and above. Each stratum will have distinct members and number of members.

8 Steps to select a stratified random sample:

1. Define the target audience.
2. Recognize the stratification variable or variables and figure out the number of strata to be used. These stratification variables should be in line with the objective of the research. Every additional information decides the stratification variables. For instance, if the objective of research to understand all the subgroups, the variables will be related to the subgroups and all the information regarding these subgroups will impact the variables. Ideally, no more than 4-6 stratification variables and no more than 6 strata should be used in a sample because an increase in stratification variables will increase the chances of some variables canceling out the impact of other variables.
3. Use an already existent sampling frame or create a frame that’s inclusive of all the information of the stratification variable for all the elements in the target audience.
4. Make changes after evaluating the sampling frame on the basis of lack of coverage, over-coverage, or grouping.
5. Considering the entire population, each stratum should be unique and should cover each and every member of the population. Within the stratum, the differences should be minimum whereas each stratum should be extremely different from one another. Each element of the population should belong to just one stratum.
6. Assign a random, unique number to each element.
7. Figure out the size of each stratum according to your requirement. The numerical distribution amongst all the elements in all the strata will determine the type of sampling to be implemented. It can either be proportional or disproportional stratified sampling.
8. The researcher can then select random elements from each stratum to form the sample. Minimum one element must be chosen from each stratum so that there’s representation from every stratum but if two elements from each stratum are selected, to easily calculate the error margins of the calculation of collected data.