Sampling

Science, Statistics

Sampling A research study is expected to help in understanding the nature of relationships shared by variables not just for the studied individuals; but for the entire population. But in order to apply the conclusions of any study, it is important to ensure that the selected sample is actually representative of the population from which it comes (Frankfort-Nachmias & Nachmias, 2008). There are different ways of choosing a sample, and each method is useful in responding to certain types of research questions. The different sampling techniques can be divided into two groups – probability sampling techniques and non-probability techniques (Frankfort-Nachmias & Nachmias, 2008). Probability techniques are based on the principle that each member of the population has an equal chance of being included into the study sample. These measures improve the likelihood that the chosen sample will be representative of all the relevant trends seen in the population. Thus, there is a greater chance that the conclusions drawn from the data would be truly applicable to the entire population (Frankfort-Nachmias & Nachmias, 2008). For a majority of studies, probability sampling techniques help in providing more valuable data, but with some research questions, non-probability techniques are more effecting in gathering the requisite sample. Some of the probability techniques include Simple Random sampling, Systematic Random Sampling, Stratified Random Sampling, and Probability Cluster Sampling (Christensen, Johnson & Turner, 2010). On the other hand, some types of Non-Probability sampling techniques include Availability Sampling, Purposive Sampling and Non-Probability Cluster Sampling (Christensen, Johnson & Turner, 2010).

Regardless of all the effort taken to draw a representative sample from the

population, there is always a chance that the sample chosen is not really representative. This would mean that there is a chance that the results of the study may not be representative of the population, and extrapolating them would be erroneous. When the chosen sample is not really representative of the population, it is due to Sampling Error (Frankfort-Nachmias & Nachmias, 2008). Typically, Probability techniques help in reducing the chance of Sampling Error by ensuring that each member of the population has the same likelihood of being chosen. Thus, when studying large and heterogeneous populations, Probability techniques are considered to be more valuable in drawing a representative sample (Christensen, Johnson & Turner, 2010). Sampling error can be reduced by increasing the size of the sample; and by using stronger Probability techniques that are applicable to the population being studied (Frankfort-Nachmias & Nachmias, 2008).

For example, when studying the attitudes of students in a high school or the attitudes of students across all high schools in a district, it is possible to create a database of their student identity numbers, and pick the required sample at random from the total list. If the study requires that each school be represented in proportion to the student strength of the school; then it is possible to establish that proportion and choose students from individual school lists accordingly. This would ensure that all students have an equal chance of being included, and having their attitudes taken into account. Thus the study findings are more likely to represent all the students. On the other hand, if the research is about the opinions of experts in a field, purposive sampling of individuals who qualify as experts would be more appropriate.

References

Christensen, L. B., Johnson, R. B. & Turner, L. A. (2010). Research Methods, Design, and Analysis (11th ed.). Boston: Allyn and Bacon.

Frankfort-Nachmias, C & Nachmias, D. (2008). Research methods in the social sciences (7th ed.). New York: Worth Publishers.