

# Random sampling and stratified sampling

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Random sampling and stratified sampling Random sampling Random sampling refers to a sampling technique where the entire population gets an equal opportunity to be chosen as a subject. A type of probability sampling technique, random sampling offers an unbiased representation of the population being studied (Babbie, 2007 p. 224). There are no specific criteria used to identify samples when using this technique, as chance or luck predetermines the subjects selected for the study. Advantages of random sampling include: Ease of assembling sample group- when using smaller populations, researchers can manually select subjects for the study using this technique whereas when dealing with larger populations, the researcher can input data into a computer and program it to randomly select the subjects using the same technique (Babbie, 2009 pp. 211-212). Fairness in choosing subjects- each member of the population gets an equal opportunity to be a subject in the study. The unbiased nature of the technique ensures a representative sample for the study. Ease of generalization of findings- because the sample used is a representative of the population being studied, it is easier to generalize findings; therefore make inferences. Random sampling has its limitations, which include: High probability of sampling error- this occurs when the sample chosen is not an accurate representation of the population (Babbie, 2009 pp. 211-212). Limited when dealing with populations with varying demographics- the techniques might not accurately account for the varying differences within a population (Babbie, 2009 pp. 211-212). Stratified sampling Also a type of probability sampling, stratified sampling refers to a sampling technique where the population is divided into sub-groups or strata based on specific criteria. Subjects are then randomly

selected proportionally from the strata (Sarndal et al., 2003 p. 100). Split into two major categories: proportionate and disproportionate stratified random sampling, the size of the population and each stratum is compared. As the names suggest, the stratum in the former technique is proportionate to the size of population, and the reverse holds true for the latter technique. A sampling fraction is used to make the comparison (Sarndal et al., 2003 p. 100). Advantages of stratified sampling include: Highlights specific sub-group within a population Highlights pre-existing relationships between sub-groups within the population Allows researchers to study the less obvious sub-groups that are often hard to access Higher statistical precision due to decreased variability in the sample group, which comprises of a representative sample of the different strata Disadvantages of stratified sampling include: Not useful when dealing with populations with limited varying traits It is also challenging to identify appropriate strata for the research study Application to study on “ High cost airlines” More often than not, researchers interested in studying transport related issues, and specifically air transport use both sampling techniques in combination (Richardson et al., 2000 pp. 81-84). At first, the researcher uses random sampling to identify the flights. The passengers in the flights are then split into different strata based on various demographic information such as gender, vocation/income, and age among others. Stratified sampling proves useful in splitting the passengers into the various strata. After identifying subjects, researchers use research instruments such as they administer questionnaires to collect the information they need. In this case, researchers are interested in studying factors related to “ High cost airlines”. Using the

techniques in combination allows the researchers to find out whether factors such as income, age, vocation and gender among other predispose passengers to use such airlines. They are then able to make inferences, which will enable airline owners to strategize (Gov. UK, 2013).

References Babbie, E., 2007. *The Basics of Social Research*. 4 ed. New York: Cengage Learning. Babbie, E., 2009. *The Practice of Social Research*. 12 ed. New York: Cengage Learning. Gov. UK, 2013. *Statistics on public attitudes to transport*. [Online] Available at: <https://www.gov.uk/government/collections/statistics-on-public-attitudes-to-transport> [Accessed 5 March 2015]. Richardson, A. J., Ampt, E. S. & Meyburg, A. H., 2000. *Survey Methods for Transport Planning*, New York: NTSA. Särndal, C.-E., Swensson, B. & Wretman, J., 2003. *Model Assisted Survey Sampling*. 1 ed. New York: Springer Science & Business Media.