Applied Sampling

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Short bio – TareK Al Baghal

Dr. Tarek Al Baghal is a Research Fellow at the Institute of Social and Economic Research, University of Essex, UK. His PhD is in Survey Research and Methodology from the University of Nebraska, and he has a Master's in the same field from the University of Maryland. He is part of the workstream team and questionnaire design lead for the Understanding Society Innovation Panel, involved in designing and implementing this longitudinal study, now on its ninth wave. He is also involved in sample allocation to differing data collection designs of the Understanding Society main survey, which is the largest of its type in the United Kingdom.

He has taught a number of courses to a variety of students, including Applied Sampling at the University of Nebraska (USA) and the University of Essex. He has also published a number of papers on topics relating to various areas of survey methods, and can be found here:

https://www.researchgate.net/profile/Tarek_Al_Baghal/publications

Course description

Applied Sampling aims to provide a practical introduction to methods of survey sampling and estimation, and is the basis of survey statistical inference. Given the importance of survey research across a range of social sciences, this course is of use to anyone interested in conducting a survey to ensure the sample obtained is the best for the research question.

This is an applied statistical methods course that focuses on the design of probability samples to be used for data collection. Sample designs are driven by analytic goals of an investigator, but this is not an analysis course. In particular, this course focuses on the principles of designing and selecting samples of individuals. These principles are also discussed in terms of the effects on inference to the population of interest, the key goal of survey research.

This will include both methods for sampling the general population and methods for sampling specialist or minority populations. Sampling techniques covered will include simple random sampling, stratification, cluster sampling, systematic sampling, multistage sampling, probability proportional to size sampling, as well as noting several non-probability methods possibly used in very small or hard-to-find populations. Applications of these methods for a variety of survey designs will be discussed, and cost, sampling frames, and sampling error estimation techniques will also be addressed.

Each day there will be practical exercises to show and experience how different sample designs are done and the possible impact these designs have on survey estimates. Participants will be also encouraged discuss their own research questions and studies to identify practical sampling solutions, to make the classes more interactive and very practical.

Software

Excel, Stata

Prerequisites

None

Schedule

July 3, 2017

Time	Topic
9-10	Principles and terminology in survey sampling
10-11	Definition of the sampling frame and possible problems
11-11:15	Break
11:15-12:30	Simple Random Sampling
12:30-1	Using a Frame, Selecting a SRS sample, Open Questions

July 4, 2017

Time	Topic
9-10:30	Stratified Sampling
10:30-11	Cluster Sampling
11-11:15	Break
11:15-12:15	Cluster Sampling
12:15-1	Selecting a Stratified Cluster Sample, Effect of Design on Estimation (Stata Example), Open Questions

July 5, 2017

Time	Topic
9-9:30	Cluster Sampling
9:30-11	PPS Sampling
11-11:15	Break
11:15-12:00	PPS Sampling
12:00-1	Selecting a PPS Sample, Student Research Questions

References

Course largely based on:

Kish, Leslie. *Survey Sampling.* 1965. John Wiley and Sons, Inc.: New York.
Blair, Edward and Johnny Blair (2015). *Applied Survey Sampling*. SAGE