Sampling, Weighting and Estimation in Survey Methodology

Course description:

This course will cover three interrelated topics: methods of selecting complex samples, creation of analysis weights that adjust for nonresponse and undercoverage, and the analysis of data collected via complex weighted surveys.

The first day will start with an introduction the framework for design based inference and some basic sampling designs will be introduced. Common features of sampling designs such as stratification, sampling of clusters and multi-stage sampling will be discussed. For each method, students will learn the relevant formulas for point estimates and variance estimates; however, the course will emphasize application over theoretical proofs of the formulas.

The second day will focus on estimation based on survey samples and inference. Furthermore, students will learn how complex designs and estimators alter the ways in which survey data should be analyzed. Traditional methods of analysis, usually taught in introductory statistics courses, are inapplicable to such data sets. There are several different methods that can be used to analyze complex weighted survey data.

Istructors:

Stefan Zins
Leibniz Institute for the Social Science (GESIS), Mannheim
His research interests include the design of rotational panels and variance estimation for complex sampling designs and statistics.
He has taught specialized courses on survey methodology, weighting and data analysis at the University of Trier

Matthias Sand
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His research interests include multiple-frame samples (especially CATI-samples), design and adjustment weighting.