

JPSM MPSDS Seminar Series
November 9, 2022
12:00 – 1:00 EST

Accounting for Non-ignorable Sampling and Nonresponse in Statistical Matching

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Professor Pfeffermann published about 80 articles in leading statistical journals and co-edited the two-volume handbook on Sample Surveys. He is Fellow of the American Statistical Association (ASA), the International Statistical Institute (ISI) and the Institute of Mathematical Statistics (IMS), and recipient of several international awards.

Abstract

Data for statistical analysis is often available from different samples, with each sample containing measurements on only some of the variables of interest. Statistical matching attempts to generate a fused database containing matched measurements on all the target variables. In this article, we consider the use of statistical matching when the samples are drawn by informative sampling designs and are subject to not missing at random nonresponse. The problem with ignoring the sampling process and nonresponse is that the distribution of the data observed for the responding units can be very different from the distribution holding for the population data, which may distort the inference process and result in a matched database that misrepresents the joint distribution in the population. Our proposed methodology employs the empirical likelihood approach and is shown to perform well in a simulation experiment and when applied to real sample data.

****Joint paper with Daniela Marella, to appear in International Statistical Review**