PhD program in Statistics

DSS Statistics Seminar

May 3, 2024, 12:00

In person **Room 24 (CU002)**

Webinar **https://uniroma1.zoom.us/j/86881977368?pwd=SWRFcVFjMDZTa0lXZk05TE1zNm5adz09**

Passcode: 432940

Issues and challenges in making inference from non-probability samples

Daniela Marella

Sapienza Università di Roma

In the recent decade the relevance of the non-probability sampling in surveys is considerably increased because of the availability of alternative data sources such as Big Data and web surveys. The major concern about non-probability samples is that the unknown selection process is frequently selective, so that they often fail to represent the target population properly and hence result in highly biased estimators.
In this work two approaches for dealing with selection bias when the selection process is nonignorable are discussed. The first one, based on the empirical likelihood, does not require parametric specification of the population model but the probability of being in the non-probability sample needed to be modeled. Auxiliary information known for the population or estimable from a probability sample can be incorporated as calibration constraints, thus enhancing the precision of the estimators.
The second one introduces the concept of uncertainty on data generating model resulting from the lack of knowledge of the sampling design acting in the non-probability sample. First of all, when extra-sample information is available, the class of plausible distributions for the variable of interest is defined. Next, a plausible estimate for such distribution is constructed and its accuracy is evaluated.

SAPIENZA
UNIVERSITÀ DI ROMA

DSS - Dipartimento di Scienze Statistiche - www.dss.uniroma1.it