Seminario: "A multivariate approach to assess balance of categorical covariates in observational studies"

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Idioma: inglés

Abstract

Selection bias is the most important vexing problem in any line of research that attempts to assert causality. Some of the greatest minds in economics and statistics have scrutinized the problem of selection bias, with the resulting approaches- Rubin’s Propensity Score or Heckman’s Selection Model.

The aim of Propensity Score (PS) is to balance non-equivalent groups on observed covariates in order to reduce bias in the causal effect estimation. The success of PS in reducing bias mainly depends on balance criteria adopted. Which balance criterion adopt is a debate still open.

The seminar will present a data driven approach that enables one to obtain a global measure of imbalance and to test it in a multivariate way. The proposal originates from the consideration that conventional tests of imbalance used to ignore the multivariate nature of data. The approach uses Conditional Multiple Correspondence Analysis to investigate the dependence relationship between the X categorical covariates and the treatment indicator variable, in order to obtain a global measure of imbalance according to their dependence structure.

Finally, proposes a strategy that enables one to find treatment groups, directly comparable with respect to pre-treatment characteristics, on which estimate local causal effects.

References


Coordinación: Christian Haedo

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