



Eva Mörk

*Department of Economics, Uppsala University
Director of Uppsala Center for Fiscal Studies (UCFS)*

Evaluating sufficiency of a pre-specified subset of confounders: Theory and application

Abstract

Average causal effects can be identified with observational data under an assumption of no unmeasured confounding. From a rich pool of covariates there can be multiple sets of covariates that are sufficient to adjust for, i.e., providing an unbiased estimate of an average causal effect. In applied research, covariate selection is commonly implemented by a combination of subject matter theory and data-driven search of covariates. In the paper presented here, we investigate and implement a criterion for evaluating sufficiency of a subset of covariates described by Robins (1997) and Greenland, Pearl and Robins (1999). We

provide a sufficient condition for a sufficient subset and describe two algorithms for: i) the average treatment effect and ii) the average treatment effect on the treated. We (re)analyse three data sets in the field of labour market program evaluation and education policy and for each data we evaluate a pre-specified subset of covariates suggested to be sufficient for no unmeasured confounding to hold. The performance of the algorithms are also evaluated in simulations for propensity score matching and IPW estimators. Joint work with Matz Dahlberg, Eva Mörk and Ulrika Vikman.

Thursday 8th March
from 1pm to 2pm
Campus Luigi Einaudi

Seminar room n. 36
Building D1 - 3rd Floor
Lungo Dora Siena 100/A, Turin