

The Performance of Different Propensity Score Methods for Estimating Causal Effects in Observational Studies

Su-Hao Tu

Academia Sinica

This study assesses the performance of propensity score methods, including matching, inverse probability of treatment weighting, and covariate adjustment, for estimating causal treatment effects in observational studies. I take the third-party presence effect in survey interview proved in the literature as an example, because the estimates of third-party presence, which does not occur randomly and is hard to be experimental designed, is inclined to be biased if only based on observational data. The examination of third-party presence effect is centered on social desirable responses to questions concerning marriage and family life, gender education, couple's incomes, democracy, traditional custom, mental health, and society security. Data analyzed are from Taiwan Social Change Surveys collected in 2010 and 2015. Representative samples of Taiwanese adults aged 18 or older based on stratified three-stage probability proportional to size as sampling scheme were collected by computer assisted personal interview. Propensity-score-model selection, common support, balance in measured baseline covariates, sensitivity analysis, standard errors of estimates, goodness-of-fit measures, and the average of treatment effect.