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Empirical Bias Bandwidth Choice for Local Polynomial Matching Estimators

Abstract:

This paper addresses the choice of an optimal smoothing parameter for local polynomial matching. A version of Empirical Bias Bandwidth Selection (EBBS) proposed by Ruppert (1997) is applied to account for the MSE computation of the matching estimator. Thereby, an estimator for the large sample variance of the local polynomial matching estimator is also provided.

A Monte Carlo study indicates better small sample performance of nonparametric matching estimators when the bandwidth choice is based on EBBS in comparison to cross-validation. Furthermore, the method is applied to estimate the treatment effect on the treated (TT) of the National Supported Work (NSW) Demonstration.