Sensitivity analysis for average treatment effects

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Abstract. Based on the conditional independence or unconfoundedness assumption, matching has become a popular approach to estimate average treatment effects. Checking the sensitivity of the estimated results with respect to deviations from this identifying assumption has become an increasingly important topic in the applied evaluation literature. If there are unobserved variables that affect assignment into treatment and the outcome variable simultaneously, a *hidden bias* might arise to which matching estimators are not robust. We address this problem with the bounding approach proposed by Rosenbaum (*Observational Studies*, 2nd ed., New York: Springer), where `mhbounds` lets the researcher determine how strongly an unmeasured variable must influence the selection process to undermine the implications of the matching analysis.

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