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Treatment choice under ambiguity induced by inferential problems. (English) Zbl 1006.62006

Summary: This paper describes the author’s research connecting the empirical analysis of treatment response with the normative analysis of treatment choice under ambiguity. Imagine a planner who must choose a treatment rule assigning a treatment to each member of a heterogeneous population of interest. The planner observes certain covariates for each person. Each member of the population has a response function mapping treatments into a real-valued outcome of interest. Suppose that the planner wants to choose a treatment rule that maximizes the population mean outcome. An optimal rule assigns to each member of the population a treatment that maximizes mean outcome conditional on the person’s observed covariates. However, identification problems in the empirical analysis of treatment response commonly prevent planners from knowing the conditional mean outcomes associated with alternative treatments; hence planners commonly face problems of treatment choice under ambiguity.

The research surveyed here characterizes this ambiguity in practical settings where the planner may be able to bound but not identify the relevant conditional mean outcomes. The statistical problem of treatment choice using finite-sample data is discussed as well.

MSC:
62C05 General considerations in statistical decision theory
62P20 Applications of statistics to economics
62A01 Foundations and philosophical topics in statistics
62G99 Nonparametric inference

Keywords:
identification; treatment response; bounds; statistical treatment rules

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References:

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