

MSc Thesis Presentation

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Propensity Score Matching Methods for the Analysis of Recurrent Events

Abstract:

Observational studies are often used to investigate the effects of treatments on a specific outcome. In many observational studies, the event of interest can be of recurrent type, which means that subjects may experience the event of interest more than one time during their follow-up. The lack of random allocation of treatments to subjects in observational studies may induce the selection bias leading to systematic differences in observed and unobserved baseline characteristics between treated and untreated subjects. Propensity score matching is a popular technique to address this issue. It is based on the estimation of conditional probability of treatment assignment given the measured baseline characteristics. The use of the propensity score in the analysis of observational studies with recurrent event outcomes has not been well developed. In this study, we consider three matching methods, and compare the efficiency of them to estimate the treatment effects in recurrent event rates through Monte Carlo simulations. We consider various scenarios under the settings of time-fixed and time-dependent treatment indicators.