Buckely–James–type estimators in classical–cohort studies [*]

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Abstract

We consider the estimation problem with the classical case-cohort data. The classical case–cohort design was first proposed by Prentice (1986). Most studies focus on the Cox regression model. In this paper, we consider the censored linear regression model. We propose several simple estimators which extend the Buckley–James estimator to the classical case-cohort design. We further carry out simulation studies to compare the asymptotic properties of these simple estimators under different sample sizes, underlying distributions and various subcohort sizes. We also perform data analysis to a real data set and compare to existing results in the literature. A proof of the consistency and asymptotic normality is given in Appendix under some simple regularity conditions.

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