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A convex programming solution based debiased estimator for quantile with missing response and high-dimensional covariables. (English) | Zbl 07476358

Summary: This paper is concerned with the estimating problem of response quantile with high-dimensional covariables when the response is missing at random. Some existing methods define root-$n$ consistent estimators for the response quantile. But these methods require correct specifications of both the conditional distribution of response given covariables and the selection probability function. In this paper, a debiased method is proposed by solving a convex program. The estimator obtained by the proposed method is asymptotically normal given a correctly specified parametric model for the conditional distribution function, without the requirement to specify the selection probability function. Moreover, the proposed estimator can be asymptotically more efficient than the existing estimators. The proposed method is evaluated by a simulation study and is illustrated by a real data example.

MSC:
62-XX Statistics

Keywords:
high dimensions; missing at random; marginal response quantile; optimal weights; selection probability function

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