

The extensively corrected score for the generalized linear models with measurement errors

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Abstract

In measurement error problems, two major estimation methods are conditional score and the corrected score. They are functional methods that require no parametric assumptions on mismeasured covariates. The conditional score requires that a suitable sufficient statistic for the mismeasured covariate can be found, while the corrected score requires that the object score function can be estimated without bias. These assumptions limit the range of applications of these two methods. The extensively corrected score proposed here is an extension of the corrected score. It yields consistent estimations in many cases for which neither the conditional score nor the corrected score is feasible. We demonstrate its construction in generalized linear models, assess its performances by simulation studies and illustrate its implementation by a real example.

Keywords: measurement error, corrected score, conditional score, extensively corrected score