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Original Articles

Delete-group Jackknife Estimate in Partially Linear Regression Models with Heteroscedasticity

Jin Hong YOU(1),Ge Mai CHEN(2)

(1)Department of Biostatistics, University of North Carolina, Chapel Hill, NC;(2)Department of Mathematics & Statistics, University of Calgary, Calgary, Alberta

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摘要 Consider a partially linear regression model with an unknown vector parameter β, an unknown function g(·), and unknown heteroscedastic error variances. Chen, You~([23]) proposed a semiparametric generalized least squares estimator (SGLSE) forβ, which takes the heteroscedasticity into account to increase efficiency. For inference based on this SGLSE, it is necessary to construct a consistent estimator for its asymptotic covariance matrix. However, when there exists within-group correlation, the traditional delta method and the delete-1 jackknife estimation fail to offer such a consistent estimator. In this paper, by deleting grouped partial residuals a delete-group jackknife method is examined. It is shown that the delete-group jackknife method indeed can provide a consistent estimator for the asymptotic covariance matrix in the presence of within-group correlations. This result is an extension of that in [21].

关键词 partially linear regression model asymptotic variance

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DOI:

通讯作者 Jin Hong YOU jinhongyou@hotmail.com