

Empirical likelihood method for linear transformation models

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Abstract Empirical likelihood inferential procedure is proposed for right censored survival data under linear transformation models, which include the commonly used proportional hazards model as a special case. A log-empirical likelihood ratio test statistic for the regression coefficients is developed. We show that the proposed log-empirical likelihood ratio test statistic converges to a standard chi-squared distribution. The result can be used to make inference about the entire regression coefficients vector as well as any subset of it. The method is illustrated by extensive simulation studies and a real example.

Keywords Empirical likelihood · Right censored data · Linear transformation models · Likelihood ratio test · Chi-squared distribution