

Title:

Confidence Intervals for Survival Quantiles in the Cox Regression Model

Author(s):

Tze Leung Lai and Zheng Su

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Abstract:

Median survival times and their associated confidence intervals are often used to summarize the survival outcome of a group of patients in clinical trials with failure-time endpoints. Although there is an extensive literature on this topic for the case in which the patients come from a homogeneous population, few papers have dealt with the case in which covariates are present as in the proportional hazards model. In this paper we propose a new approach to this problem and demonstrate its advantages over existing methods, not only for the proportional hazards model but also for the widely studied cases where covariates are absent and where there is no censoring. As an illustration, we apply it to the Stanford Heart Transplant data. Asymptotic theory and simulation studies show that the proposed method indeed yields confidence intervals and bands with accurate coverage errors.