Quantile Regression Models for the Survival Data with Missing Censoring Indicator

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Abstract: The quantile regression model is a flexible and useful approach for analyzing the survival data, which allows the effects of the covariates vary with quantiles. In this paper, we propose a class of quantile regression models for the survival data with missing censoring indicator, which allow the effect of the covariates to be varying or constant. Based on inverse probability weighting, estimating equations imputation and augmented inverse probability weighting tech-nique, three weighted profile estimating equations are proposed and the iterative algorithms that are easily implemented are suggested to solve these profile estimating equations. Asymp-totic properties of the resultant estimators and the resampling-based inference procedures are established. Finally, the finite sample performances of the proposed approaches are investigated in simulation studies and a real data application. The proofs of Theorems are provided in the Appendix.