

Ingrid van Keilegom
Université catholique de Louvain, Belgium

Abstract

Title: Flexible parametric model for survival data subject to dependent censoring

When modeling survival data, it is common to assume that the (log-transformed) survival time (T) is conditionally independent of the (log-transformed) censoring time (C) given a set of covariates. There are numerous situations in which this assumption is in doubt, and a number of correction procedures have been developed for different models. However, in most cases, some prior knowledge about the association between T and C is required. When neither prior knowledge nor auxiliary information is available, the application of many existing methods turns out to be limited. In this paper, we develop a flexible parametric model to estimate the association between T and C , without any additional information. We show that the association between T and C is identifiable. The performance of the proposed method is investigated both in an asymptotic way and through finite sample simulations. We also develop a diagnostic plot approach to assess the quality of the fitted model. Finally, the approach is illustrated on real data coming from a study on liver transplantations.