

A Vine Copula Approach for Regression Analysis of Bivariate Current Status Data with Informative Censoring

Huiqiong Li

Yunnan University

E-mail: lihuiqiong@ynu.edu.cn

Abstract: Bivariate current status data occur in many areas and many authors have discussed their analysis and proposed many inference procedures (Hu et al., 2017; Jewell et al., 2005; Wang et al., 2015). However, most of these methods are for the situation where the observation or censoring is non-informative and sometimes one may face informative censoring (Chen et al., 2012; Ma et al., 2015; Zhang et al., 2005), where one has to deal with three correlated random variables. In this paper, a vine copula approach is developed for regression analysis of bivariate current status data in the presence of informative censoring. The proposed estimators are shown to be strongly consistent and the asymptotic normality and efficiency of the estimated regression parameter are also established. Numerical results suggest that the proposed method works well in practice.