Properties of the Marginal Survival Functions for Dependent Censored Data under an Assumed Archimedean Copula

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Given a dependent censored data \((X, \delta) = (\min(T, C), I(T < C))\) from an Archimedean copula model, we give general formulas for possible marginal survival functions of \(T\) and \(C\). Based on our formulas, we can easily establish the relationship between all these survival functions and derive some useful identifiability results. Also based on our formulas, we propose a new estimator of the marginal survival function when the Archimedean copula model is assumed to be known. Simulation studies have shown that our estimator is comparable with the copula-graphic estimator proposed by Zheng and Klein (1995) and Zheng and Klein’s estimator (1994). We illustrate the application of our estimator using a survival data set and end our talk with some discussions.