

Ordinal Dominance Curve and Uniform Stochastic Orderings with Survival Data

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Abstract

When survival data are collected from ordered hazardous environments, uniform stochastic ordering, also known as hazard rate ordering for absolutely continuous distributions, is applied to describe the relation of distributions and achieve better efficiency in statistic inferences. In this work, we develop equality tests under HRO and goodness-of-fit tests for the adequacy of HRO in the present data with a nonparametric ordinary dominance curve (ODC). We propose a grouping method based on hazard and develop inferences on the ODC and receiver operating characteristic curve (ROC). Finally, we provide simulation results to support the theoretical results of the tests and ODC and ROC estimation.