

Colloquium

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Applications of Conditional Empirical Likelihood Methods

The empirical likelihood method is a nonparametric statistical method with useful statistical properties that can be used to construct confidence intervals/regions for parameters of interest. An extension of this method, the conditional empirical likelihood method, allows the efficient incorporation of side/auxiliary information. We present two applications of the conditional empirical likelihood method for the analysis of data from randomized clinical trials. For both situations we adjust for covariates by incorporating the information that the treatment groups are balanced in expectation. The first case involves the estimation of the difference between means for treatment groups, while the second case deals with the estimation of the Mann-Whitney measure of association. We report results from simulation studies and illustrate the new methods with the analysis of data from a randomized clinical trial for the comparison of treatments for pain for osteoarthritis patients.