

Empirical Likelihood for Estimating Equations with Nonignorably Missing Data

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We develop an empirical likelihood (EL) inference on parameters in generalized estimating equations with nonignorably missing response data. We consider an exponential tilting model for the nonignorably missing mechanism and propose modified estimating equations by imputing missing data through a kernel regression method. We establish some asymptotic properties of the EL estimators of the unknown parameters under different scenarios. With the use of auxiliary information, the EL estimators are statistically more efficient. Simulation studies are used to assess the finite sample performance of our proposed EL estimators. We apply our EL estimators to investigate a real data set on earnings obtained from the New York Social Indicators Survey.

Key Words: Estimating equations, exponential tilting; imputation; kernel regression