Bias in Multivariate Generalized Linear Models

S. Mukhopadhyay and André I. Khuri
Department of Statistics, University of Florida

Maximum likelihood estimates are known to be biased when the sample size, n, is small. In this article, a general approximate expression is derived for the bias associated with maximum likelihood estimates of the parameters of the linear predictor in a multivariate generalized linear model. An application of the bias formula is illustrated in the particular case of the bivariate binary distribution.

Key Words: Bivariate binary distribution, exponential family, likelihood function, maximum likelihood estimate, multiresponse experiments.