Quasi-Bayes methods for categorical data under informative censoring

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Abstract

Bayesian methods for sampling with censored categorical observations (i.e., suffer missing distinctions between categories) are important in many applications. Previous work has relied on strong restrictions, such as truthful reporting, noninformative censoring, etc. However, working within an extensive family of prior distributions, Jiang and Dickey (2008) have given a Bayesian method applicable with or without such restrictions. The posterior estimates, in general, have closed forms involving multiple hypergeometric functions. Here, we give a quasi-Bayes computational procedure, which is very easy to code and has efficient CPU time, for accurate approximation of the Bayesian estimates. Simulation studies show that this procedure has desirable convergence properties. In addition, it is shown that the procedure yields true results as Bayesian methods when typical restrictions are imposed. This work joints with James M. Dickey.