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Nonparametric Imputation Method for Nonresponse in Surveys

Many imputation methods are based on statistical models that assume that the variable of interest is a noisy observation of a function of the auxiliary variables. Misspecification of this model may lead to severe errors in estimates and to misleading conclusions. A new imputation method for item nonresponse in surveys is proposed based on a nonparametric estimation of the functional dependence between the variable of interest and the auxiliary variables. We consider the use of smoothing spline estimation within an additive model framework to flexibly build an imputation model in the case of multiple auxiliary variables.