

Robust model-based sampling designs

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Abstract

I will describe some work currently being carried out with Alan Welsh at Australian National University. The problem addressed is to draw a sample, from which to estimate a population total. The data are completely known covariates, to which the unknown response variable is related. Difficulties to be overcome are that the relationship between these variables is only approximately, and perhaps erroneously, specified; similarly the variance/covariance structure of the data must be anticipated at the design stage. We derive minimax designs, and a genetic algorithm for computing the designs.

Keywords

Design, Genetic algorithm, Minimax, Robust.