

Variance estimation using judgment post-stratification

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Abstract We consider the problem of estimating the variance of a population using judgment post-stratification. By conditioning on the observed vector of ordered in-stratum sample sizes, we develop a conditionally unbiased nonparametric estimator that outperforms the sample variance except when the rankings are very poor. This estimator also outperforms the standard unbiased nonparametric variance estimator from unbalanced ranked-set sampling.

Keywords Conditioning · Imperfect rankings · Judgment ranking · Ranked-set sampling