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Title:

Domain Estimation Under Informative Linkage

Abstract:

When modelling sample data obtained via linkage of two registers it is standard to assume that the stochastic properties of the linking process and those of the stochastic process underpinning the population values of the response variable Y are independent of one another given population covariate information ("non-informative linkage"). Here we consider the case where these covariates correspond to domain and stratum affiliations, and where linkage is carried out at stratum level but the targets of inference are domain means. Our interest is in the impact of failure of the non-informative linkage assumption. The mechanism that we investigate for this failure is where there is another latent covariate, denoted by Z, which is an indicator for "ease of linkage" and is strongly correlated with Y. In particular, we use simulation to explore where Z is associated (directly or indirectly) with the probabilities of correct linkage and with the probabilities of sample inclusion.