

HETEROGENEITY IN CAPTURE-RECAPTURE METHODS

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Capture-Recapture methods are commonly used to estimate the size of hidden human populations in the field of epidemiology and public health. Two basic assumptions behind Capture-Recapture methods are independence between lists and homogeneity of capture probabilities. These assumptions are however not valid in human populations. Heterogeneity can be split into two parts: observed and unobserved heterogeneity. Covariates and mixture models can be introduced into Capture-Recapture methods to account for observed and unobserved heterogeneity respectively. The literature covers widely these two propositions. However, it discusses rarely a combination of both propositions. We propose a new method which combines covariates and mixture models, thereby accounting for observed and unobserved heterogeneity in the population. We use simulation studies to evaluate the efficiency of the proposed method.