



CPS Paper

RESPONSE MODEL SELECTION IN SMALL AREA ESTIMATION IN CASE OF NOT MISSING AT RANDOM NONRESPONSE

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Brief Description

Sverchkov and Pfeffermann (S-P, 2018, 2019) consider Small Area Estimation under informative probability sampling of areas and within the sampled areas, and not missing at random (NMAR) nonresponse.

To account for the nonresponse, S-P assume a given response model and estimate the corresponding response probabilities by application of the Missing Information Principle, which consists of defining the likelihood as if there was complete response and then integrating out the unobserved outcomes from the likelihood employing the relationship between the sample and sample-complement distributions.

A key condition for the success of this approach is the specification of the response model.

In this presentation we consider likelihood ratio tests and information criteria based on the above likelihood and show how they can be used for the selection of the response model.

We illustrate the approach by a small simulation study. REFERENCES Pfeffermann, D.

and Sverchkov, M.

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Multivariate small area estimation under nonignorable nonresponse, *Statistical Theory and Related Fields*, 3, pp.

213-223

Sverchkov, M.

and Pfeffermann, D.

(2018).

Small area estimation under informative sampling and not missing at random non-response.

Journal of Royal Statistical Society, ser.

A, 181, Part 4, pp.

981–1008.

Abstract

Sverchkov and Pfeffermann (S-P, 2018, 2019) consider Small Area Estimation under informative probability sampling of areas and within the sampled areas, and not missing at random (NMAR) nonresponse. To account for the nonresponse, S-P assume a given response model and estimate the corresponding response probabilities by application of the Missing Information Principle, which consists of defining the likelihood as if there was complete response and then integrating out the unobserved outcomes from the likelihood employing the relationship between the sample and sample-complement distributions.

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approach by a small simulation study.

Key words: information criteria, likelihood ratio tests, missing information principle

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