

國立中央大學

統計研究所

學術演講

主 講 人：李榮銘 特聘教授（逢甲大學統計系）

講 題：A two-stage multi-level randomized response technique with proportional odds models and missing covariates

時 間：109年3月3日（星期二）上午11：00 ~ 12：00

地 點：中央大學鴻經館 M429室

茶 會：上午 10：30 ~ 11：00 地 點：鴻經館 510 室

ABSTRACT

Surveys of income are complicated by the sensitive nature of the topic. The problem researchers face is how to encourage participants to respond and to provide truthful responses in surveys. To correct biases induced by nonresponse or underreporting, we propose a two-stage multi-level randomized response (MRR) technique to investigate the true level of income and to protect personal privacy. For a wide range of applications, we present a proportional odds model for two-stage MRR data, and apply inverse probability weighting and multiple imputation methods to deal with covariates on some subjects that are missing at random. A simulation study is conducted to investigate the effects of missing covariates and to evaluate the performance of the proposed methods. The practicality of the proposed methods is illustrated with the regular monthly income data collected in the Taiwan Social Change Survey. Furthermore, we provide an estimate of personal regular monthly mean income.

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