國立成功大學統計學系

專題演講

時　間：108 年 11 月 28 日 (星期四) 下午 3:30 – 5:00

地　點：統計學系三樓視聽教室 (62331)

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題　目：A Modified Two-Stage Sampling Scheme with Integrated Second Stage Sample

Abstract

In a large scale sampling survey, such as a nationwide social survey, a two- or multi-stage sampling design is often used to save the sampling cost. Consequently, estimation precision would be compromised, and often it would be difficult to estimate the subpopulation of interest since secondary sampling units are independently selected within each selected primary sampling units and therefore the within-subpopulation sample size cannot be controlled. Motivated by the Taiwanese Primary Farm Household Survey, a modified two-stage cluster sampling design is proposed to strike a balance between the sampling cost and the estimation precision, a modified two-stage cluster sampling design is proposed and investigated.

A set of primary units is selected in the first stage sampling, and then the sampling population of the second-stage sampling is composed of the integration of all the secondary units within the selected primary units, such that a more flexible second-stage sampling design can be used to seek for a better estimation precision. In addition, the estimation of the subpopulation of interest becomes possible with a proper second stage design. Property of the proposed sampling scheme is studied by various combinations of the first-and second-stage designs are studied together with different estimators of the population quantity of interest. The performances are also compared with other comparable sampling designs.

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