

# Local Post-stratification in Censuses

CHENG YONG TANG

## ABSTRACT

We propose a local post-stratification approach to analyze the capture-recapture dual system census data. The local post-stratification is carried out via a nonparametric regression estimation of the census enumeration and the correct enumeration functions. We propose a nonparametric population size estimator that is designed to accommodate some key aspects of the national census surveys: missing values, erroneous enumerations and extra covariates affecting the missingness and correct enumeration. The resulting estimates are compared with estimates from a conventional post-stratification and a logistic regression in an analysis on the 2000 US Census accuracy and coverage evaluation data. This talk is based on joint works with Song X. Chen and Vincent T. Mule Jr.

KEYWORDS: Capture-recapture; Erroneous enumeration; Kernel smoothing; Missing Values; Population size estimation.