



The Chinese University of Hong Kong
Department of Statistics

Seminar

Efficiency and Robustness of Calibration Estimators in Missing Data Problems

By

Dr. Kwun Chuen Gary Chan
Department of Biostatistics
University of Washington, U.S.A.

Abstract

Calibration was developed by survey statisticians for improving efficiency of inverse probability weighting estimators when population totals of auxiliary variables are known. It is less well known in the field of biostatistics, but a similar data structure permits calibration to apply to general missing data problems. We study the efficiency and robustness properties of calibration estimators in the context of missing data. A large class of survey calibration estimators was constructed based on generalized empirical likelihood, and was shown to enjoy efficiency and robustness properties similar to but more general than existing methods in the missing data literature. Calibration estimators allow multiple working outcome regression models to be posited and enjoy a multiple robustness property more general than double robustness considered in the missing data literature. We also show that calibration estimators are semiparametric locally efficient under a more relaxed condition compared to alternative estimators. Calibration is very flexible, easily implemented and can be applied to different models under the same framework.

Date: September 24, 2010
Time: 2:00 p.m. - 3:00 p.m.
Place: Lady Shaw Building, Room C5
The Chinese University of Hong Kong