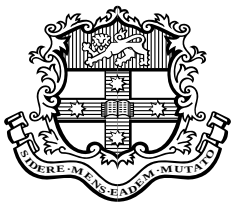

UNIVERSITY OF SYDNEY

SCHOOL OF MATHEMATICS AND STATISTICS

Statistics Seminar

Friday, 29 September, 2.00pm

Eastern Avenue Lecture Theater

Maximum Likelihood With Auxiliary Information

Pr Suojin Wang
Texas A&M University.

Abstract

Analysis of survey data does not happen in a vacuum. We typically know more about the target population than just the data observed in the survey. In some cases this extra information can be incorporated via calibration of survey weights. However, model fitting using weights often leads to increased standard errors. Also, weights are usually calibrated to a relatively small set of variables, while population data may be known for many more variables. Here we use the general approach to maximum likelihood estimation for complex surveys described in Breckling et al. (1994) to develop methods for efficiently incorporating external population information into model fitting using survey data. In particular, we focus on two simple, but very popular, models fitted to survey data. These are the linear regression model and the logistic regression model. We use innovative saddlepoint methods to derive highly accurate approximations to obtain the scoring and information functions for these situations.

Enquiries about the Statistics Seminar should be directed to
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