

Analyzing survey data

Alastair Scott

Department of Statistics, University of Auckland

e-mail: a.scott@auckland.ac.nz

ABSTRACT.

Gad Nathan was one of the first people to appreciate the problems that arise when conventional techniques for statistical analysis are applied to data from a complex survey. He did pioneering work in a number of areas, including regression and the analysis of categorical data. In particular, it was this latter work that led to my own work with Jon Rao on adapting chi-squared and likelihood-ratio tests for loglinear-models to survey data. In this paper, I discuss the origins of this work and its application to likelihood-ratio tests for more general models, as well as to analogues of model selection criteria such as AIC.

Key Words: Chi-squared tests; multistage sampling; survey weights; Rao-Scott tests.