

OTHER SOFTWARE

StatXact and LogXact

For certain analyses, specialized software is better than the major packages. A good example is *StatXact* (Cytel Software, Cambridge, Massachusetts), which provides exact analysis for categorical data methods and some nonparametric methods. See www.cytel.com/Software/StatXact.aspx for details. Among its procedures are small-sample confidence intervals for a binomial parameter, the difference of proportions, relative risk, and odds ratio, and Fisher's exact test and its generalizations for $I \times J$ tables. It can also conduct exact tests of conditional independence and of equality of odds ratios in $2 \times 2 \times K$ tables, and exact confidence intervals for the common odds ratio in several 2×2 tables. Starting with version 10, adaptations of exact tests using the mid-P value and related CIs are available for a large number of analyses. StatXact uses Monte Carlo methods to approximate exact P -values and confidence intervals when a data set is too large for exact inference to be computationally feasible. A listing of the extensive selection of small-sample methods available in StatXact as of 2002 was given in Table 1 of the article by R. A. Oster in the August 2002 issue of *The American Statistician* (pp. 235-246), although this is largely now out of date.

Its companion, *LogXact*, performs exact conditional logistic regression. It also provides exact conditional analyses for baseline-category logit and adjacent-category logit models. Again, the latest version also can use the mid-P value for many analyses. See www.cytel.com/Software/LogXact.aspx for details.

HLM

HLM, from Scientific Software International (Chicago), fits multilevel models. See

www.ssicentral.com/hlm

For examples, see the useful site

www.ats.ucla.edu/stat/hlm/examples/default.htm

set up by the UCLA Statistical Computing Center.

Latent Gold

The Latent Gold program, marketed by Statistical Innovations (Belmont, MA), can fit a wide variety of finite mixture models such as latent class models (i.e. the latent variable is categorical), nonparametric mixtures of logistic regression, and some Rasch mixture models. It can handle binary, nominal, ordinal, and count response variables and can include random effects that are treated in a nonparametric method rather than assumed to have a normal distribution. See

www.statisticalinnovations.com/products/latentgold.html

See also

www.ats.ucla.edu/stat/latent_gold/default.htm

set up by the UCLA Statistical Computing Center.

LEM

LEM is a general program for latent class modeling. See

www.tilburguniversity.edu/nl/over-tilburg-university/schools/socialsciences/organisatie/departement

and also the site

www.ats.ucla.edu/stat/lem/default.htm

set up by the UCLA Statistical Computing Center.

LIMDEP and NLOGIT

LIMDEP is designed for modeling limited dependent variables, including multinomial discrete choice models and count data models. NLOGIT is designed for nested logit models and multinomial logit models, and can handle extended discrete choice models that do not appear in LIMDEP. See

www.limdep.com/

For examples of LIMDEP from Greene's *Econometric Analysis*, see the useful site

www.ats.ucla.edu/stat/limdep/examples/default.htm

set up by the UCLA Statistical Computing Center.

MAREG

The program MAREG (Kastner et al. 1997) provides GEE fitting and ML fitting of marginal models with the Fitzmaurice and Laird (1993) approach, allowing multcategory responses. See

www.stat.uni-muenchen.de/sfb386/software/mareg/winmareg.html

MLwiN

MLwiN is a software package for fitting multilevel models. See

www.cmm.bristol.ac.uk/MLwiN

For examples, see the useful site

www.ats.ucla.edu/stat/mlwin/examples

set up by the UCLA Statistical Computing Center.

PASS

PASS, marketed by NCSS Statistical Software (Kaysville, Utah), provides power analyses and sample size determination.

SUDAAN

SUDAAN, from the Research Triangle Institute (Research Triangle Park, North Carolina), provides analyses for categorical and continuous data from stratified multi-stage

cluster designs. See

www.rti.org/sudaan/

It has facility (MULTILOG procedure) for GEE analyses of marginal models for nominal and ordinal responses. See

www.rti.org/sudaan/onlinehelp/sudaanMULTILOG_Procedure.html

For examples, see the useful site

www.ats.ucla.edu/stat/sudaan/examples/default.htm

set up by the UCLA Statistical Computing Center.

SuperMix

SuperMix, distributed by Scientific Software International, provides ML fitting of generalized linear mixed models, including count responses, nominal responses, and ordinal responses using cumulative links including the cumulative logit, cumulative probit, and cumulative complementary log-log. This program is based on software developed over the years by Donald Hedeker and Robert Gibbons, who have also done considerable research on mixed models. For multilevel models, the program is supposed to be much faster than PROC MIXED or PROC NLMIXED in SAS and make it possible to fit relatively complex models using ML rather than approximations such as penalized quasi likelihood (communication from Robert Gibbons). See

www.ssicentral.com/supermix/index.html

Yet Other Software

For software for the Berger - Boos test and other small-sample unconditional tests for 2×2 tables, see

www.west.asu.edu/rlberge1/software.html

For a variety of permutation analyses for categorical and continuous variables, including some multivariate analyses, using SAS macros constructed by Luigi Salmaso and Fortunato Pesarin and others at the University of Padova, see

homes.stat.unipd.it/pesarin/software.html

Robert Newcombe at the University of Wales in Cardiff provides an Excel spreadsheet for forming various confidence intervals for a proportion and for comparing two proportions with independent or with matched samples. His website also has SPSS and Minitab macros for doing this. See

medicine.cf.ac.uk/en/research/research-groups/clinical-epidemiology/resources/