

East Asia Training & Consultancy Pte Ltd

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The Stata logo consists of the word "STATA" in a bold, white, sans-serif font, with a registered trademark symbol (®) to its upper right. The logo is set against a dark blue background that features a subtle, glowing light effect on the right side.

Statistical Software for Professionals

STATISTICAL METHODS FOR RESEARCH USING STATA

3 ½ -Day Professional Development Workshop in Singapore

East Asia Training & Consultancy Pte Ltd invites you to attend a three and a half-day professional development workshop in Singapore, reviewing statistical methods for research using Stata to analyse the course databases. Stata is the well-known statistics and econometrics software package developed by StataCorp (USA). Stata is a statistical software package that offers a broad range of statistics to professional researchers in many disciplines. Stata is particular useful to professionals working in areas of business, social science, health and medical research, education, economics and science.

COURSE DESCRIPTION

The comprehensive 'hands-on' workshop will provide an in depth look at how Stata can be used for statistical research in business, government, education, healthcare, and science. Every stage in the research project will be discussed. The first half-day will be devoted to providing participants with an overview of Stata; the final half-day will consist of participants learning how to write their own statistical tests as well as how to construct Iteratively Re-weighted Least Squares (IRLS) and Maximum Likelihood commands. Participants will also learn how to develop simulated data sets of a specified distribution. During the main part of the course, discussion will emphasize the use of research models such as logistic regression, count response regression models, categorical response models, panel/longitudinal models, and mixed effects models for understanding the specific goals of a research study.

WHO SHOULD ATTEND

This course is of value for Stata & non-Stata users as well. It is a course on research design and appropriate tests and models. We'll teach non-Stata users

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the basics of Stata so that you can implement these methods into your research, but you can also translate many methods into your own preferred software application; eg. SAS, SPSS, S-Plus/R, Genstat. In other words, this course is suitable to researchers across many disciplines as well as users of most any software. Case studies are from business, social science, health and medical research, education, and science. Special live case studies & data sets are from NASA/JPL (Jet Propulsion Laboratory).

FEE & REGISTRATION

The fee includes extensive course materials, data-sets, lectures, lunches, morning and afternoon coffee/tea breaks, receptions and the opportunity to network with researchers, economists and biostatisticians across the various industries in Asia. This is a “hands-on” workshop. Participants are required to bring their own laptops.

The number of participants is restricted. Please register early to guarantee your place. Please complete the official registration form and fax to (65)-67694739 or email it to us at stata@eastasiatc.com.sg to reserve your place. Confirmation will only be made upon receiving full payment. Further instructions will be sent to confirmed participants.

COURSE OUTLINE

SESSION 1 : DAY 1 PM

1: An Overview of Stata

User interface; specifying commands and options; memory management; familiarity with the range of capabilities; manipulating and transforming data and files, use of editor; interfacing with Stata web site and help facilities; constructing basic graphs; so forth. Also discussed is other software and utilities that are important to many research projects, eg: file conversion facilities, PDF creation programs, etc.

SESSION 2 : DAY 2 AM

2: Research Design

Data size considerations; selecting the appropriate test or model; sample and power analysis; validation data; normality and other distribution tests and transforms; exact statistics; other considerations in research design.

3: Analysis of tables

Basics of ANOVA/ANCOVA: selecting the appropriate table and tests; understanding p-values; construction of risk & odds ratios.

4: Methods of Model Estimation

Generalized Linear Models (GLM) versus maximum likelihood estimation (MLE); derivation and structure of estimating algorithms.

SESSION 3 : DAY 2 PM

5: Binary Response Models

Logistic, probit, complementary loglog, loglog models: Setting up the model; establishing validation data; selection of predictor and confounders; selection of predictors in general; creating dummy variables; creating interactions; interpretation of parameter estimates; handling standard errors; interpreting p-values; marginal effects; m- vs c-symptotics; ROC; residual analysis; goodness-of-fit tests; graphical analysis of models.

SESSION 4 : DAY 3 AM

6: Binomial or proportional Logistic Models

Defining, identifying and handling apparent and real overdispersion; converting a binary to a binomial or proportional model; interpretation of parameter estimates; standard errors (model, robust, bootstrapped, jackknife); interpreting p-values; goodness-of-fit tests; graphical analysis of model; exact and Markov Count Monte Carlo logistic regression.

SESSION 5 : DAY 3 PM

7: Categorical Response Models

Proportional Odds Models: Model setup; interpretation of estimates; GOF. Generalized ordered binomial models: testing proportionality of estimates; interpretation of estimates; GOF. Multinomial regression: IIA assumption, interpretation of estimates, GOF. Discriminant Analysis: classification methods; compare with binomial models.

8: Count Response Models

Poisson regression: estimating algorithm, interpretation of estimates, GOF; parameterization of rates; assessing model assumptions; problems of overdispersion; logistic binomial vs Poisson data considerations. Negative Binomial : testing against Poisson; assessing model assumptions; interpretation of estimates and heterogeneity parameter. Extended count models: Handling models with no 0 counts; handling models with excessive 0 counts – ZIP/ZINB, hurdle models, generalized poisson; changing the variance: NB1 vs NB2, NB-H models, NB-C models, NB-P models, censored count models, exact Poisson regression.

SESSION 6 : DAY 4 AM

9: Longitudinal and Panel data models

Unconditional fixed effects models; conditional fixed effects models; GEE models and selection of appropriate correlation structure; quasi least squares; random effects models; basics of mixed effects models and multilevel mixed effects models.

10: Survival Models

Overview of essential survival analyses, eg: Logrank and Wilcoxon tests; Kaplan-Meier tests; construction and interpretation of Cox Proportional Hazards model; parametric survival models.

11: Reporting Results

SESSION 7 : DAY 4 PM

12: Programming in Stata

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Use of Stata as a calculator; Doing it Yourself -- programming a function; example programming projects: a simple programming task, trimmed mean, IRLS logistic and Poisson regression, MLE logistic and Poisson regression; more complex models; handling panels.

Participants will engage in a programming project.