

## 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

# ADVANCED QUANTITATIVE METHODS USING STATA

## 3-Day Professional Development Workshop

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**East Asia Training & Consultancy Pte Ltd** invites you to attend a three -day professional development workshop on advanced quantitative methods using Stata. Stata is the well-known statistics and econometrics software package developed by StataCorp (USA).

### About STATA

STATA is a user-friendly statistical software package that offers a broad range of statistical tools to professional researchers in many disciplines. STATA is particular useful to professionals working in areas of biostatistics, medical research and economic research.

### Course Description

Participants will learn STATA tools used for data management, basic and advanced statistical methods including linear and non-linear regression analysis with cross-sectional, panel and time-series data. The workshop also covers programming with STATA. The topics and tools covered in the workshop are general, useful to anyone who is interested in carrying out empirical work in the social sciences and biomedical research that requires statistical analysis of real data. Statistical methods and theories will be explained for each topic, but the emphasis is on learning the practical aspects of the tools provided by STATA as well as the interpretation and analysis of estimation results. During the six practice sessions, participants will have hands-on opportunities to analyze real data sets mostly selected from those used for actual research projects in economics, finance, education, psychology and medicine.

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### **Pre-requisite**

The course is designed for applied researchers in government, industry and academe who have completed an undergraduate course in statistics or econometrics.

### **Who Should Attend?**

The target group of the workshop is professionals including social science researchers, business and economics consultants, public policymakers, lecturers, students, etc., who regularly work with a wide variety of real data sets, for example, from market surveys, finance, medical research, the stock market, and so on.

### **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 statisticians across the various industries in Asia. This is a “hands-on” workshop and all 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)-62506369 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.

### **MAS Financial Sector Development Fund (FSDF)**

Participants may be eligible for Financial Sector Development Fund (FSDF) support on a case by case basis. Interested applicants should submit their applications to the FSDF Secretariat directly. For enquiries, please contact the FSDF secretariat at 65- 6229 9396 or via email at fsdf@mas.gov.sg. You may use the printable MAS FSDF application form in Word format posted on our website. Please submit your applications to the FSDF Secretariat directly at least 6 weeks prior to the commencement of the course.

### **Course Outline**

(subject to minor changes)

Each day will comprise three formal sessions:

- A talk on various aspects and procedures in STATA and statistical concepts

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- Worked examples
- Assignments

There will also be the opportunity each day to work on your own data, and discuss procedures not listed below.

## DAY 1

### Morning Session

- Introduction to STATA
  - STATA basics, syntax and operators, data entry, management and graphics

### Tea Break

- Introduction to empirical research methods
  - Advice on carrying out an empirical or quantitative research
  - Case Studies and applications

### Lunch

### Afternoon Session

- OLS, GLS, MLE, and GMM
  - Estimation of linear and non-linear models (diagnostic tests, hypothesis tests, interpretation, prediction, specification error)

### Tea Break

- Limited Dependent Variable (LDV) models (Binomial/Multinomial/Unordered/Ordered Probit, Logit, Count models, Tobit, Heckit)
- Case studies and applications

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### DAY 2

#### Morning Session

- IV Estimation and Panel Data Regression
  - Two stage least squares (2SLS)

#### Tea Break

- Difference-in-difference estimator, fixed-effects, random-effects, Hausman-Taylor IV estimator, Arellano-Bond estimator
- Case studies & applications

#### Lunch

#### Afternoon Session

- Quantile Regression
  - QR basics, estimation and interference

#### Tea Break

- Duration or Event History Models
  - Survival and hazard functions
  - Semi-parametric methods for hazard regression (including time-varying covariates)
  - Case studies & applications

### DAY 3

#### Morning Session

- Regression with Time Series data
  - Univariate time series, ARMA, ARIMA, Markov-switching models, estimation and forecasting

#### Tea Break

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- Multivariate times series regression (ADL, VAR, ECM)
- Case studies & applications

Lunch

### Afternoon Session

- STATA programming
  - Macros / Program arguments / Accessing / Saving results / Ado-files / MATA / Writing help file
  - Case studies & applications

Tea Break

- Integrating STATA with WinBUGS for Bayesian Analysis
- Case studies & applications