

# Structural Equation Modeling with LISREL

## A Three-Day Workshop

by Karl Jöreskog and Fan Yang Wallentin

Venue: Athens University of Economics and Business, Athens, Greece

Dates: 16–18 January, 2007

Hours: 9.00 – 12.00 13.00–16.00 (lectures); 16.00–18.00 (supervised practical)

Interested participants should contact Irimi Moustaki by email: [moustaki@aueb.gr](mailto:moustaki@aueb.gr). There may be a small fee for participants outside of Athens University of Economics and Business.

### Objective

Structural equation modeling is one of the most widely used technique for analysing multivariate data in the social and behavioral sciences. This workshop will cover modern statistical methods for factor analysis and structural equation models. The emphasis will be on how to use the methodology of structural equation modeling as a research tool in practical applications. The lectures will cover general topics and discuss and demonstrate several real data examples with LISREL. In the afternoon session, participants will have an opportunity to work on their own problems and data, or on assigned problems under the instructors' supervision.

### Schedule and Topics

#### January 16

Time	Topics
9.00 - 12.00	Overview of SEM, LISREL and the Interface Diagnosis and Treatment of Non-Normality Ways to Deal with Missing Values
13.00 - 16.00	Exploratory Factor Analysis Measurement Models Confirmatory Factor Analysis
16.00 - 18.00	Supervised Practical

## January 17

Time	Topics
9.00 - 12.00	Univariate and Multivariate Regression Models Path Analysis with Directly Observed Variables The Full LISREL Model Fitting and Testing Models Models for Longitudinal Data
13.00 - 16.00	Multiple Group Analysis Multiple Group Analysis with Latent Means
16.00 - 18.00	Supervised Practical

## January 18

Time	Topics
9.00 - 12.00	Ordinal Variables in Cross-sectional Data Ordinal Variables in Longitudinal Data
13.00 - 16.00	Multilevel Analysis and Latent Growth Curves
16.00 - 18.00	Supervised Practical

### Books

The following two books are strongly recommended. Many examples discussed in the workshop are taken from these books. These and other books on LISREL can be purchased from Scientific Software International (SSI), see [www.ssicentral.com](http://www.ssicentral.com).

Jöreskog, K.G. & Sörbom, D. (1999) *LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language*. Lincolnwood: Scientific Software International.

Jöreskog, K.G., Sörbom, D., Du Toit, S., & Du Toit M. (2000) *LISREL 8: New Statistical Features*. Second printing with revisions. Lincolnwood: Scientific Software International.

### Software

LISREL 8.8 will be used in the workshop. Participants will receive a CD with the student version of LISREL 8.8.

## Instructors

*Karl G Jöreskog* is Professor Emeritus in Statistics at Uppsala University. He holds a PhD from Uppsala University and three Doctors *honoris causa*. He has authored several books and numerous journal articles on factor analysis and structural equation modeling. He presented the first LISREL model in 1973. Together with Dag Sörbom he developed the LISREL computer program.

*Fan Yang Wallentin* is Associate Professor in Statistics at Uppsala University. She received her PhD in Statistics 1997 from Uppsala University with a dissertation *Non-linear structural equation models: Simulation studies of the Kenny-Judd model*. She received the Arnberg prize year 2000 by the Swedish Royal Academy of Sciences. Her main research interests are in the theory and applications of structural equation models and other types of multivariate analysis, particularly their applications in the social and behavioral sciences. She has published several chapters and articles on this and related topics.