Structural Equation Modeling Seminar

Location: CIQSS, 3535 Queen-Mary, Suite 420, Montréal
Dates: May 2–6, 2011

Financial support for this Data Training School is provided by the universities affiliated to QICSS[1].

Course objectives and content

This intensive, graduate-level, five-day seminar deals with the principles, assumptions, strengths, limitations, and applications of the family of techniques known as structural equation modeling (SEM). Basic SEM techniques, including path analysis, confirmatory factor analysis (CFA), and full "LISREL" (structural regression) models, will be covered. Some familiarity with basic statistical techniques, such as multiple regression and exploratory factor analysis, is assumed, but higher levels of quantitative knowledge are not required.

Also, the presentation of topics will be conceptually rather than mathematically oriented, and many examples of the application of SEM to different kinds of actual research problems are considered. There will be a strong emphasis on avoiding common kinds of mistakes in the analysis of structural equation models. Computer tools for SEM will be described, and there will be opportunities for participants to gain hands-on practice with actual SEM analyses on site.

Trainer

This training session will be under the responsibility of Dr. Rex B. Kline, Professor at the Department of Psychology, Concordia University.[2]

General course information

All sessions will be in English. The seminar is scheduled from **9:00am to 5:00pm**. Morning sessions will be used for theoretical presentations. Some time in the afternoon sessions on Tuesday and Wednesday will be reserved for computer exercises using the LISREL program.

Seminar web site

http://psychology.concordia.ca/fac/kline/sem/qicss.html

Tentative Schedule

Day 1. Background concepts: Data preparation, model types, computer tool overview
Day 2. Path analysis: Effects, estimation, testing, EQS example, computer practice (SIMPLIS syntax)
Day 3. Confirmatory factor analysis: Models, Mplus example, computer practice (LISREL visual editor)
Day 4. Structural-regression models: Variations, LISREL example
Day 5. Finish scheduled topics, open question period

Main Source (optional)

Kline, R. B. (2010). *Principles and practice of structural equation modeling* (3rd ed.). New York: Guildford Press. (See book resource site at http://www.guilford.com/kline)

---

[1] Université de Montréal, INRS-UCS, McGill University, Concordia University, Université Laval, Université du Québec à Montréal, Université de Sherbrooke.

[2] 514-848-2424, ext.7556, rex.kline@concordia.ca, http://tinyurl.com/rexkline

Other Seminar Readings (see seminar website)

MacCallum, R. C., & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology*, *51*, 201-226.

Sava, F. A. (2002). Causes and effects of teacher conflict-inducing attitudes towards pupils: A path analysis model. *Teaching and Teacher Education*, 18, 1007-1021.

Software Programs

Listed below are freely-available versions of some SEM computer programs that can be downloaded over the Internet:

Program	Web address	Limits
Amos 5 student version	http://amosdevelopment.com/download/	8 variables, 54 parameters
LISREL 8.8 student version	http://www.ssicentral.com/lisrel/student.html	15 variables
LISREL 8.8 full version	http://www.ssicentral.com/lisrel/downloads.html	15-day trial (full version)
Mx Graph	http://www.vcu.edu/mx/index.html	None (full version)
Mplus demo version	http://www.statmodel.com/demo.shtml	8 variables, 2 levels

Software Resources

Syntax examples (Kline)	http://psychology.concordia.ca/fac/kline/sem/syntax.pdf
LISREL for Windows	www.ssicentral.com/lisrel/techdocs/GSWLISREL.pdf

Eligibility

The course is open to graduate students, postdoctoral fellows, faculty members, and practicing researchers in government or the private sector.

A maximum of 15 participants will be selected on the basis of the relevance of the course to their curriculum, research, or teaching.

Registration

The online registration period will run from **March 11 to April 3, 2011**. Selection results will be announced during the week of **April 4, 2011**.

Information

Luc St-Pierre
l.st-pierre@umontreal.ca