

TWO-DAY WORKSHOP • UNIVERSITY OF MONTREAL, CANADA • MONDAY AND TUESDAY OCTOBER 23 AND 24, 2006

**LECTURER:
BENGT O. MUTHÉN**

This two-day workshop discusses advances in latent variable modeling made possible by the general modeling framework of the Mplus program (www.statmodel.com). The generality of the Mplus modeling framework comes from the unique use of both continuous and categorical latent variables. While continuous latent variables have seen frequent use in factor analysis, structural equation modeling (SEM), and random effects growth modeling, modeling that includes categorical latent variables is less widespread. The workshop focuses on models that use categorical latent variables, either alone or together with continuous latent variables. The theme is the use of categorical latent variables to represent latent classes corresponding to different groups of individuals and latent trajectory classes corresponding to different types of development. An overview of conventional and new techniques is given. For each topic, issues of model specification, identification, estimation, testing, and model modification are discussed. Several examples are examined. Practical modeling strategies are proposed. Mplus input setups are provided and Mplus outputs are used for interpretation of analysis results. The presentation is in lecture format with no need for computer analyses. A good preparation for this workshop is the 2-day training on SEM and growth modeling given at Johns Hopkins Center for Prevention and Early Intervention, Thursday and Friday October 19 and 20, 2006 (<http://www.jhsph.edu/prevention/Conferences/Muthen2006>).

PREREQUISITES: FAMILIARITY WITH CATEGORICAL DATA ANALYSIS; INTERMEDIATE UNDERSTANDING OF LATENT VARIABLE SEM, AND MULTILEVEL MODELING.




COURSE CONTENT

MONDAY, OCTOBER 23 • 8:30 A.M. — 5:30 P.M.



OBSERVED AND LATENT CATEGORICAL VARIABLE MODELING USING MPLUS

TOPICS:











Overview of Modeling with Observed Variables that are Categorical, Censored, or Counts

-  Logit, multinomial logit, probit, censored-normal, Poisson, and zero-inflated Poisson regression
-  Multilevel regression analysis with a categorical outcome
-  Path analysis

Overview of Modeling with Observed Categorical and Latent Continuous Variables

-  Item response theory (IRT)
-  Factor analysis with covariates









Modeling with Latent Categorical Variables (Mixture Modeling)

-  Regression mixture analysis
-  Randomized response modeling of sensitive questions
-  Complier-average causal effect (CACE) estimation in randomized trials
-  Latent class analysis
-  Latent class analysis with covariates
-  Confirmatory latent class analysis
-  Twin modeling
-  Multilevel latent class analysis
-  Violations of conditional independence
-  Latent class factor analysis, factor mixture modeling, IRT mixture modeling, structural equation mixture modeling

TUESDAY, OCTOBER 24 • 8:30 A.M. — 5:30 P.M.

LONGITUDINAL MODELING WITH CATEGORICAL LATENT VARIABLES USING MPLUS

TOPICS:

-  Latent transition analysis, Hidden Markov modeling
-  Latent class growth analysis
-  Growth mixture modeling with latent trajectory classes
-  Randomized trials and treatment effects varying across latent trajectory classes
-  Latent class growth analysis vs. growth mixture modeling
-  Numerical integration, mixtures, and non-parametric representation of factor distributions
-  Multilevel IRT mixture modeling
-  3-level growth mixture modeling

APPLICATION FORM

TWO-DAY WORKSHOP ON MIXTURE MODELING USING MPLUS • UNIVERSITY OF MONTREAL MONDAY AND TUESDAY OCTOBER 23 AND 24, 2006

First Name _____ Last Name _____
Institution _____ Department _____
Email _____ Phone _____ Fax _____
Full Address _____

Preferred courses (tick one):

Monday, October 23 (85\$)
Tuesday, October 24 (85\$)
Two Days (160\$)

DEADLINE FOR INSCRIPTION:

Friday, September 29, 2006
Only 100 Places Available

- ☛ Fees are in **Canadian dollar** and include participation, handouts prepared by the guest lecturer, and coffee/refreshments during the breaks. Participants are responsible for their lunch and diner.
- ☛ The courses will be taught in the room Z-330, Claire McNicoll Building (for a little virtual tour about University of Montreal, see <http://www.umontreal.ca/english/index.htm>; or <http://www.fenetre.umontreal.ca/english/index.html>).
- ☛ Please fill out this Registration Form and send it with your check / money order (payable to "University of Montreal").
- ☛ **Important: Your reservation will be official only once your full payment has been received and confirmed.**

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