Mplus for Latent Variable Modeling Training Course

Professional Development Training Course Outline

Category	Research and Data Analysis	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Unlock the power of advanced statistical modeling with our Mplus for Latent Variable Modeling Training Course, designed for researchers, data scientists, and social scientists seeking to master structural equation modeling (SEM), latent growth modeling, and factor analysis. Mplus for Latent Variable Modeling Training Course equips participants with hands-on skills to analyze complex data, uncover hidden patterns, and generate robust, reproducible insights using Mplus, a premier software for latent variable analysis. Through a combination of theory, practical exercises, and real-world case studies, attendees will gain the confidence to tackle multilevel modeling, mediation/moderation analysis, and confirmatory factor analysis across diverse research contexts.

Participants will benefit from a structured, immersive learning experience, leveraging step-by-step Mplus tutorials, interactive simulations, and applied statistical modeling techniques. By the end of the course, learners will not only interpret latent constructs and structural relationships with precision but also enhance their ability to publish high-impact research and make data-driven decisions in psychology, social sciences, marketing analytics, and education research. Whether you're a novice or intermediate user, this course bridges the gap between statistical theory and applied practice using Mplus 8+ features, ensuring your data analyses are both rigorous and actionable.

Programme Curriculum

Mplus for Latent Variable Modeling Training Course

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Course Objectives

By the end of this training, participants will be able to:

1. Master Mplus syntax and modeling environment for latent variable analysis.
2. Conduct confirmatory factor analysis (CFA) to validate measurement models.
3. Perform structural equation modeling (SEM) for complex variable relationships.
4. Implement latent growth curve modeling (LGCM) to study longitudinal data.
5. Analyze multilevel data using Mplus for hierarchical structures.
6. Apply mediation and moderation analysis in latent variable contexts.
7. Handle missing data using modern estimation methods (FIML, multiple imputation).
8. Interpret model fit indices and optimize model performance.
9. Conduct latent class and mixture modeling for heterogeneous populations.
10. Integrate real-world datasets into Mplus for applied research insights.
11. Generate publication-ready output and graphical representations.
12. Compare alternative modeling strategies to improve predictive validity.
13. Enhance decision-making and research design with advanced latent variable techniques.

Target Audience

- Social scientists and psychologists
- Educational researchers
- Marketing analysts and data scientists
- Policy researchers and evaluators
- Graduate students in statistics or social sciences
- Healthcare and clinical researchers
- HR and organizational development professionals
- Academics preparing research for publication

Course Modules

Module 1: Introduction to Mplus and Latent Variable Modeling

- Overview of Mplus software and interface
- Basics of latent variable concepts

- Understanding observed vs latent variables
- Case study: Modeling latent traits in educational achievement
- Setting up your first Mplus model

Module 2: Confirmatory Factor Analysis (CFA)

- Defining measurement models
- Estimation techniques and model fit evaluation
- Modifying CFA models for optimal fit
- Case study: Psychological scale validation
- Running CFA using real survey data

Module 3: Structural Equation Modeling (SEM)

- Path analysis and latent constructs
- Direct and indirect effects modeling
- Evaluating SEM model fit
- Case study: Employee engagement and productivity relationships
- SEM with Mplus syntax

Module 4: Latent Growth Curve Modeling (LGCM)

- Longitudinal data setup in Mplus
- Estimating growth trajectories
- Interpreting growth factor variances
- Case study: Tracking student academic progress
- LGCM with multi-wave datasets

Module 5: Multilevel and Hierarchical Modeling

- Two-level and three-level modeling
- Handling clustered data
- Random effects and variance partitioning
- Case study: School-level effects on student outcomes
- Multilevel Mplus analysis

Module 6: Mediation and Moderation in Latent Models

- Defining mediators and moderators
- Indirect effect estimation
- Moderated mediation modeling
- Case study: Impact of training on performance via motivation
- Mediation/moderation syntax in Mplus

Module 7: Latent Class and Mixture Modeling

- Identifying latent subpopulations
- Model selection criteria
- Class enumeration and interpretation
- Case study: Customer segmentation in marketing analytics
- Latent class analysis with survey data

Module 8: Advanced Model Diagnostics and Output Interpretation

- Model fit indices
- Handling missing data and estimation methods
- Output visualization and reporting
- Case study: Predicting patient adherence in clinical trials
- Generating publication-ready reports

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com