

6 Further topics

Outline

- EFA background
- EFA variations
 - ESEM, PSEM
 - Second-order, SEFA
 - Bi-factor, DSEFA
 - Target
- EFA in an SEM setting
 - MIMIC
 - EFA/CFA on EFA/CFA
- EFA in a multiple-group setting
 - EFA alignment
- EFA in a longitudinal setting
 - EFA longitudinal invariance testing
 - EFA longitudinal alignment
 - EFA growth modeling
- **Further topics**
- EFA theory

Slide 123 returns to the Outline of the presentation. We will now turn to Further topics.

Further Topics

- Mixture EFA
 - User's Guide ex 4.4
 - For papers, see the Special Mplus Topic Mixture modeling page:
<https://www.statmodel.com/MixtureModeling.shtml>
- Twolevel EFA
 - User's Guide ex 4.5, 4.6
 - Mplus Short Courses Topic 7, Mplus Web Talk 1
- DSEM EFA
 - Asparouhov & Muthén (2026b)

Slide 124 lists some further EFA topics that will not be covered in this presentation, including sources for studies of these topics.

Mixture EFA uses both continuous latent variables and categorical latent variables. EFA is specified for the continuous factors, to which a mixture of 2 or more latent classes is added. Viewed from the perspective of mixture modeling, this allows EFA within-class correlations for latent class/latent profile analysis.

Twolevel EFA makes it possible to do EFA on each of the two levels with different number of factors on the two levels. It is also possible to leave one of the levels unrestricted and only test the number of factors on the other level.

EFA with dynamic structural equation modeling (DSEM) makes it possible to explore the time-invariant measurement structure.