

Foundations of Structural Equation Modeling and Cross-Cultural Comparisons

Start: May 27th 2019 at 9.30 am

End: May 29th 2019 at 12:30 pm

Instructors: Dr. Agnes Stancel-Piątak, Dr. Minge Chen, Dr. Justin Wild

Background and Objective

Education research aims to provide evidence on psychological and environmental conditions that are related to learning processes. This approach creates challenges related to proper measurement and analysis of concepts that are not directly observable (such as student motivation, or learning environment). In structural equation modeling (SEM) the observable indicators are combined into one factor to reflect the latent (not directly observable) psychological or sociological phenomena. SEM further allows for analysis of the relationships between latent constructs providing usually more precise parameter estimators than analysis with manifest (observable) indicators.

This workshop is designed to introduce participants to SEM theory and its applications, focusing on the features particular to Large-scale Assessment data in general with an emphasis on cross-cultural comparisons. Participants will gain practical experience in applying SEM with Mplus to Large-scale Assessment data using examples from IEA studies.

Description

The workshop begins with a methodological introduction to SEM and its underlying assumptions followed by applications of Mplus (including model specification, estimation and interpretation) using IEA data as examples. Moreover, the cross-cultural comparability of latent constructs is discussed and the concept of Measurement Invariance Testing is introduced using data examples. The course considers methodological concepts related to the complex study and sampling design of Large-scale Assessments, and provides advice on selecting the most appropriate approach to latent modeling for analyzing Large-scale Assessment data.

Expected outcomes for participants

After the workshop participants will be able to:

- ✓ Understand the theoretical principals and assumptions associated with SEM and cross-cultural invariance testing;
- ✓ Understand the methodological implications related to the complex study design of Large-scale Assessments relevant for conducting SEM;
- ✓ Specify SEM models and Measurement Invariance analysis using MPlus considering the complex design of IEA studies;
- ✓ Interpret and present results of CFA and SEM analyses, with an emphasis on educational research and policy.

Target audience and requirements

Workshop participants will require solid knowledge of inferential statistics (such as regression, correlation, and variance analysis). Familiarity with statistical software such as SPSS, and their application to large-scale data, is expected. Mplus knowledge and familiarity with syntax based analysis is an advantage. Data for exercises is provided during the workshop.

Software used:	Mplus
Language of Instruction:	English
Duration:	2.5 days
Course Level:	Intermediate
Topics:¹	Introduction to SEM Overview of Common Factor Model Confirmatory Factor Analysis (CFA) Structural Equation Models MGCFAs: Measurement Invariance Test of the Cross-Cultural Comparability Introduction to Mplus Model-data Fits and Model Comparison Regression

¹ Listed here are tentative topics for the workshop

Registration and fees

Registration should be made via the registration website

<https://sem-workshop.iea-hamburg.de>

An early bird discount of 50 € will be granted if the completed registration and payment are received before April 1st, 2019. Registration is open until May 16th, 2019.

General registration: 525 €

Student registration: 465 €

Payments should either be effected via PayPal using the PayPal button on the registration gateway, or via bank transfer. Payments via bank transfer are only recommended for Eurozone countries within the SEPA (Single Euro Payments Area) due to additional bank charges. It may take a few days until the updated payment status is displayed online on your personal registration page.

Cash payments will not be accepted.

*Evidence of the student status must be provided at the time of registration. Please email a scanned copy of your student ID to seminar@iea-hamburg.de.

Travel information and accommodation

Sign-in: May 27th, 2019, 9:00-9:30 a.m.

Start: May 27th, 2019, 9:30 a.m.

End: May 29th, 2019, 12:30 p.m.

A detailed agenda will be made available to the participants in due time before the workshop

Venue: IEA Hamburg
Conference Center
Überseering 27
22297 Hamburg/Germany
tel: +49(0)40 48 500 666
fax:+49(0) 40 48 500 515
email: seminar@iea-hamburg.de
web: www.iea.nl

Accommodation

A limited number of rooms have been blocked for the SEM Workshop participants at the Holiday Inn Hamburg - City Nord, which is within walking distance (10 minutes) to the IEA Hamburg Conference Center. Single rooms are at € 120.56/night, double rooms at € 130.56/night (breakfast and tax included). Cancellation free of charge is possible until three days prior to arrival. Please note that there is a city tourist tax applicable in case you have not provided an employer confirmation that your stay is due to a business trip.

Bookings should be made either by e-mail, indicating the booking code mentioned below. Please be advised that a valid credit card will be needed to guarantee the booking.

Holiday Inn Hamburg – City Nord
Kapstadtring 2a
22297 Hamburg/Germany
email: reservierung@hi-city-nord.de
Booking code: “SEM Workshop”

Further information

For content-related information, please contact randa@iea-hamburg.de.

For information on administrative issues, please contact seminar@iea-hamburg.de.