



Workshop Specification – T1	
Title	Structural Equation Modeling (SEM) Using AMOS Graphic
Field	Business Management, Science and Social Science
Trainer	Professor Dr Zainudin Awang
Date	18th – 20th Oct ,15
Language	English
Duration	Level 1 (2 days) Level 2 (2 days)
Fees	200 BD Per Level

General Description of the Workshop:

Structural Equation Modeling (SEM), is one of the newest methods of multivariate analysis developed specifically to overcome the limitations in the previous methodology namely the Ordinary Least Square (OLS) regressions especially when analysing latent constructs.

Unlike traditional OLS, SEM, which is often termed as the Second Generation Method, could entertain latent constructs with multiple indicators as well as the usual observed variables into the model concurrently and, more importantly, the inter-relationship among them are analysed simultaneously.

This workshop would explain the basic concept of SEM and how it works together with easy to understand examples. The workshop will employ IBM-SPSS-AMOS software Version 21.0. Participants will experience the hands-on practice to model and solve the problems in some postgraduate studies. Among the statistical analysis procedure explained in detail include the testing of hypothesis for Path Model (direct effect), testing the mediation effect of a Mediator (direct as well as indirect effect), and testing the moderation effect of a Moderator variable in the model.



Targeted Trainees:

Academicians, Researchers, Practitioners, and Postgraduates Researchers. Also those who are writing paper for journals where they are required to employ SEM in their analysis.

Expected Learning Outcome:

i. Knowledge and Understanding

- Understanding the theoretical concept behind the application of SEM in researches.
- Attendees will be able to apply the newest method of data analysis for academic researches.

ii. Intellectual Skills

- Manage to employ methods of multivariate analysis.
- Manage to employ appropriate software for exploratory and confirmatory study. Top tier journals required newest method of data analysis.

iii. Practical and Professional Skills

- Manage to model real-life problems and apply the newest technique in research methodology to obtain solutions.
- Able to do trouble-shooting should there be any problem in the analysis itself.



Topics to Be Covered:

Level 1 (2 Days)					
	Topic	Description	Training Strategies	No of Hours	
				Lecturer	Workshop
1	Overview SEM and its wide range of application	Explain the concept of SEM and how it works	Two way communication	2	-
2	Types of models involve in SEM and their usage	Compare and contrast different models and its application (example)	Two way communication. Install Software	2	
3	Validating the measurement model of latent constructs	Running the Confirmatory Factor Analysis procedure for measurement models	Hands-on Participants own Laptop	-	2
4	CFA reporting procedure for Unidimensionality, Validity and Reliability	The write-up and the required format before proceed into running SEM	Hands-on Participants own Laptop	-	2
5	Running the Structural Equation Modeling	Draw models in Amos Graphic, attach data file and execute the program	Hands-on Participants own Laptop	-	2
6	Testing the hypothesis for causal effect (Direct effect hypothesis)	Path analysis procedure for testing the significance of path coefficient	Hands-on Participants own Laptop	1	1
6	Hypothesis testing reporting procedure. (writing format)	Writing report for the results of every hypothesis in the model	Hands-on Participants own Laptop	-	1
7	Testing the hypothesis for mediation effect. (Mediator Construct)	Lecture and hands-on practice exercises in class using real study data	Hands-on Participants own Laptop	1	2
8	Question and Answer Session Workshop Ends				



LEVEL 2 (2 DAYS)					
	Topic	Description	Training Strategies	No of Hours	
				Lecture	Workshop
1	Recap on modeling and testing the direct effects hypotheses	Revision on SEM using more sophisticated model	Practical using participant laptop	-	2
2	Practical session using real data. CFA, SEM. Reporting	Participants will do the complete analysis from beginning to the end	Practical using participant laptop	-	2
3	Practical session on testing the mediator effects in the model	Participants will do the complete analysis from beginning to the end	Practical using participant laptop	-	2
4	Introduction to the concept of bootstrapping and its application	Why bootstrapping? To employ bootstrapping to confirm the mediation test	Practical using participant laptop	-	2
5	Calculate the effect size in mediation test	What is effect size? How to calculate and to report.	Practical using participant laptop	-	1
6	Testing hypothesis for moderation effect of a variable in the model	What is moderator? Why testing moderator? How to do it? Practical example	Practical using participant laptop	1	2
7	Practical example in analyzing moderator in the model. Reporting procedure	Hands-on practice using real data. Participants should be able to master the procedure.	Practical using participant laptop	1	2
Question and Answer Session					
Workshop Ends					



Assessment Technique:

Participants will be given real data-sets for practice and exercises. They have to submit their individual work for assessment.

Training Resources and Materials:

A book on Structural Equation Modelling (SEM) using AMOS Graphics (2015) will be distributed to every participant. The whole sessions will follow the chapter in the book. The price will be determined by UOB.

Hands-on guide from the facilitator.

Remarks:

- Please note seats are limited and in order to participate in this workshop please register online or contact our center on 1743-7717.
- These two workshops are not included in the conference fees.
- Discount will be applied for University's Group
- Software (AMOS) and Book will be provided to participants.

Trainer Biography:

Zainudin Awang is a professor and a deputy dean in the Faculty of Economics and Management Sciences University of Sultan Zainal Abidin (UniSZA), 21300 Kuala Terengganu, Malaysia. He holds a PhD in (Marketing from UMT, Malaysia (2007), MSc in Applied Statistics from Western Michigan University, USA (1989), and BSc in Statistics from Iowa State University, USA (1987). Among his research interests are Marketing Research, Business Research, Management Research, Applied Research in Statistics, and Structural Equation Modelling (SEM).