The University of Melbourne
Melbourne School of Psychological Sciences
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PSYC40005 Advanced Design and Data Analysis

Laboratory Exercise 6:
Structural equation modeling

In this lab, we will use AMOS but not an SPSS dataset. In this case, we will use an excel spreadsheet, illustrating that AMOS can be used independently of SPSS. As well, the data is in the form of a variance-covariance matrix of the variables, not the original data. SEM fits the variance-covariance matrix, so if raw data is used, then AMOS converts it into this form anyway.

We will also follow extracts from two chapters from the AMOS User's Guide (Arbuckle, 2011) to provide detailed instructions and practice in fitting models. The chapters are on LMS.

The two datasets are in the files Warren5v.xls and Warrne9v.xls. Descriptions of the data are in the chapters.

Open AMOS Graphics by going into "All Programs" under the Start button, and finding the AMOS folder. If the window contains a diagram it means that Amos has remembered the last use [by someone else]. If so go to **File** and pull down to 'New'.

1. Use the data in Warren5v to fit the regression model from Chapter 4. Stop once you reach the section labelled "Modeling in VB.NET" (page 77 in the User's Guide.) the regression path diagram is on page 68 and the instructions follow thereafter. To read the data into AMOS, find the "Select data file(s)" button on the AMOS window and then search for the datafile. Proceed through the instructions. When it comes to fitting the model, don't forget to ask for standardized estimates as we did in Lab class 5, using the Analysis Properties window. In the same window, ask for Squared multiple correlations.

2. Fit Model A from Chapter 5.

Reference
Arbuckle, J.L. (2011). *IBM SPSS Amos 20 User's Guide*. IBM