

PRI Workshop-Introduction to MPlus Workshop

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3/6/08

1. Data manipulation should be done in a different statistical package
 - a. Mplus does not have code to generate new variables or recode variables
 - b. EXCEPTION: you can convert a continuous variable into a categorical variable
 - c. Define: cut hvalue (90000 150000 270000)
 - i. Creates different categories in the output
2. There are two different ways to open a file in Mplus:
 - a. Stat Transfer into an ASCII (.dat) file
 - b. Use the command “stata2mplus” with a STATA dataset
 - i. Creates an input file-Stata creates syntax with variables already included

Example: **stata2mplus using mpluswkshp**

3. General tips about syntax
 - a. There are six sections of syntax which are highlighted in blue and end in a colon
 - b. Commands are informal, must end in a semicolon
 - c. Variable names should not be more than 8 characters long
 - d. Is/are are interchangeable-mplus does not know grammar

Example: **data IS mpluswkshp.dat;**

- e. For regression: dependent ON independent independent independent
 - f. Correlation: independent. WITH independent
4. Six major parts of an input file (though there are additional sections you may use):
 - a. Title-you can write anything
 - i. There is not limit to the number of characters
 - ii. You do not have to end this section in a semicolon

Title:

This is my first attempt at running analyses in mplus

- b. Data-no pathname is required
 - i. Tells mplus which .dat file you are using

Data:

Data are mpluswkshp.dat;

- c. Variable-four commands are available
 - i. Names are
 - 1. Lists all variables in the dataset
 - ii. Usevariables are
 - 1. Specifies which variables are being used in the model
 - iii. Missing are all (-9999)
 - 1. Stata does this for you to recognize missing values
 - iv. Categorical are
 - 1. Default is to assume that all variables are continuous
 - 2. Categorical command is only necessary for descriptive statistics
 - a. You will get an error message if you use categorical in a regression model for independent variables
 - b. You may use categorical for the dependent variable in a logistic or probit model

Variable:

Names are

female rooms hvalue age id orace black asian hisp nchild educ;

Usevariables are

rooms educ nchild orace black asian hisp;

Categorical are

orace black asian hisp;

Missing are all (-9999);

- d. Analysis: Specifies the type of analysis you wish to perform
 - i. In this workshop, we will be using basic, meanstructure, and general
 - ii. You MUST specify in the analysis if you have missing data if you want to use FIML
 - 1. Otherwise listwise deletion is performed

Analysis:

Type = basic missing;

****BENEFIT OF MPLUS:** Amos requires a continuous or ordinal dependent variable, but Mplus allows you to have a dichotomous dependent variable

- 5. Model: Tells mplus which regression(s) you want to run
 - a. Allows for regression, correlation, and measurement of direct and indirect effects
 - b. Each equation/correlation is on a new line
 - c. A semicolon is placed at the end of each line
 - d. To measure indirect effects, Model indirect is an additional part of the syntax
 - e. For instance, in the example below, your syntax would have both the “model” and the “model indirect” commands

Model:

rooms on nchild age educ female;

educ with female;

Model indirect:

rooms ind age;

- f. To do path modeling, there are three parts of the code
 - i. One in which you determine parameter estimates based on the entire regression model (in the “model” section)
 - ii. one in which you define the dependent and independent variable for which you are interested in finding the indirect effects (in the “model indirect” section)
 - iii. one in which you define which independent variables mediate the relationship between your independent variable of interest and the outcome (in the “model indirect” section)
 1. NOTE-the independent variable of interest is placed at the end of both the *ind* and the *via* commands

Model:

rooms on nchild age educ nmar div sep wid;

Model Indirect:

rooms ind age;

rooms VIA nchild educ age;

6. Output: this command allows you to specify the output you want

Output:

Standardized;

7. Like Amos, analyses cannot be run until your syntax is saved
8. You know that your syntax is correct when you see the phrase “INPUT READING TERMINATED NORMALLY” in your output

Example syntax

SYNTAX FOR SUMMARY STATISTICS:

Title:

Stata2Mplus conversion for stataworkshop2.dta
Summary Statistics

Data:

File is mpluswkshp.dat ;

Variable:

Names are

id age female nchild rooms hvalue hisp educ black asian orace nmar
wid div sep;

Categorical are

female hisp black asian orace nmar wid div sep;

Missing are all (-9999) ;

Analysis:

Type = basic missing;

SYNTAX FOR OLS REGRESSION:

Title:

Stata2Mplus conversion for stataworkshop2.dta

List of variables converted shown below

OLS Regression

Data:

File is mpluswkshp.dat ;

Variable:

Names are

id age female nchild rooms hvalue hisp educ black asian orace nmar

wid div sep;

usevariables are

rooms female educ nchild;

Missing are all (-9999);

Analysis:

Type = meanstructure missing;

Model:

rooms on female nchild educ;

SYNTAX FOR PATH MODELING:

Title:

Stata2Mplus conversion for stataworkshop2.dta

List of variables converted shown below

Data:

File is mpluswkshp.dat ;

Variable:

Names are

id age female nchild rooms hvalue hisp educ black asian orace nmar

wid div sep;

usevariables are

rooms educ age wid div sep nmar nchild;

Missing are all (-9999);

Analysis:

Type = meanstructure missing;

Model:

rooms on age nchild educ nmar div sep wid;

Model indirect:

rooms ind age;

rooms via nchild educ age;

Output:

Standardized;

SYNTAX FOR LOGISTIC REGRESSION:

Title:

Stata2Mplus conversion for stataworkshop2.dta

List of variables converted shown below

Logistic Regression

Data:

File is mpluswkshp.dat ;

Variable:

Names are

id age female nchild rooms hvalue hisp educ black asian orace nmar

wid div sep;

usevariables are

rooms hvalue educ female black asian orace hisp;

Categorical is hvalue;

Define:

cut hvalue (218803);

Analysis:

Type = general;

estimator = ml;

Model:

hvalue on rooms educ female black asian orace hisp;