

# Mplus Diagrammer

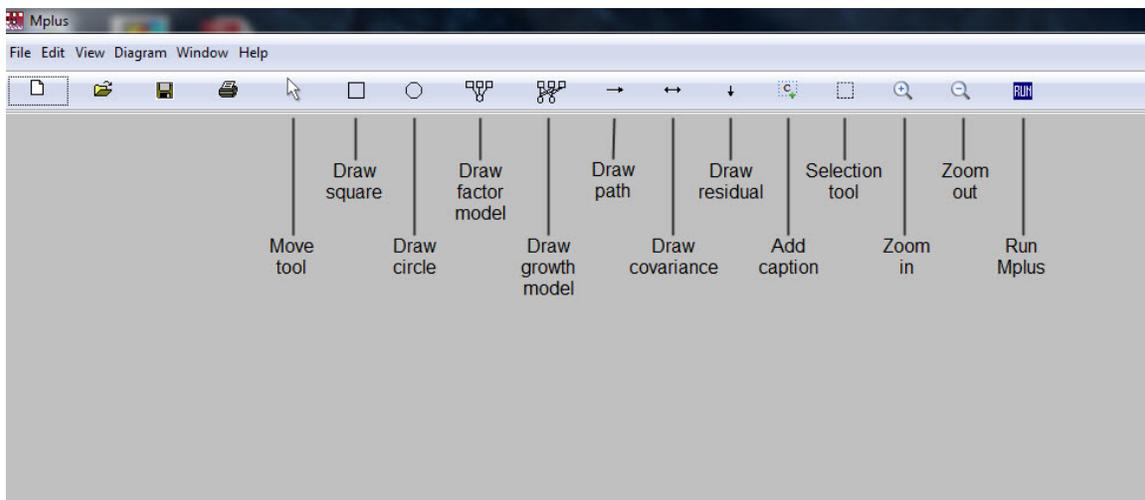
## Version 1

### September 2012

The Mplus Diagrammer can be used to draw an input diagram, to view a diagram created from an analysis, and to view a diagram created using an input without an analysis. In Version 1, diagrams are available for the types of models specified in Chapters 3, 5, and 6 of the Mplus User's Guide. The diagram along with the corresponding input file can be saved for future use. The diagram can be saved as a PDF for publication.

### Input Diagram

The Diagrammer uses a set of drawing tools to draw a diagram. The Diagrammer is accessed through the Open Diagrammer menu option of the Diagram menu in the Mplus Editor. Once the Diagrammer is opened, the input diagram can be drawn using a set of drawing tools that can be accessed via the toolbar, menus, and pop-up menus. The toolbar buttons and menu items available for drawing are: Move tool, Draw square, Draw circle, Draw factor model, Draw growth model, Draw path, Draw covariance, Draw residual, Add caption, Selection tool, Zoom in, Zoom out, and Run Mplus. All of the toolbar buttons are shown in the picture below.



To draw a diagram of a factor model, click on the Draw factor model button or select Draw factor model from the Diagram menu and then click on the open page. A prompt for the number of observed variables will appear followed by a prompt asking whether default variable names should be used or variables names should be entered. If the prompt Enter variable names is selected, a prompt for the name of the factor is followed by a prompt for the names of the observed variables. A second factor model can be added by clicking again on the page. To move the factor model, right-click on the factor circle or on any of the factor indicator squares and choose Select factor/growth model. This activates the Move tool. Click on the part of the page where you want the factor

model to be placed or drag it there. To deselect the factor model, right-click anywhere on the page and select Deselect all. An observed variable can be added to the model by clicking on the Draw square button or selecting Draw square from the Diagram menu. An arrow can be used to connect the factor to the observed variable by clicking on the Draw path button or selecting Draw path from the Diagram menu. When Draw path is selected, click on the object from which the arrow originates and pull the arrow head to the object where the arrow ends. Click on that object. In addition to the drawing tools, pop-up menus are available. Right-clicking on an object or a blank area in the diagram brings up pop-up menus showing all available options.

While a diagram is being drawn on the left-hand side of the screen, the MODEL command is being written on the right-hand side of the screen. When the input diagram is complete, the rest of the Mplus language can be added to the right-hand side of the screen. The analysis can be run by clicking on the RUN button. A file with a dgm extension is created that contains the diagram. The diagram can also be saved as a PDF using the Export to PDF option of the FILE menu. To make changes to the diagram after it is opened, click on the Input mode menu item of the Diagram menu. This option switches the diagram from an output diagram to an input diagram where changes to the diagram can be made. The input file is shown on the right-hand side of the screen.

Prior to the analysis, the diagram and input file can be saved by using the Save option of the File menu. The file has an mdg extension. It contains both the diagram and the input file.

### Output Diagram

The Diagrammer can be used to view a diagram created from an analysis. This is the default. For other choices, see the Mplus menu in the Mplus Editor. To use the Diagrammer to view a diagram, open an input in the Mplus Editor and click on the RUN button. Once the analysis is completed, the output diagram can be viewed by using the View diagram menu item of the Diagram menu. The diagram can be edited using the drawing tools described above. Parameter estimates and standard errors are printed on the diagram as the default. The View menu shows the menu items for changing what is printed on the diagram. To edit the diagram, select Input mode from the Diagram menu. Then select any of the drawing tools, for example, Draw path, to change the diagram. When a change is made to the diagram, the corresponding change is made to the input file. If a model contains parameter labels, they can be added to the diagram by selecting Show parameter labels from the View menu. A title can be added to the diagram by using the Add caption button or menu item. Once the diagram has been changed, go to the input file and click on the RUN button to obtain the diagram with the new parameter estimates and standard errors.

A file with a dgm extension is created that contains the diagram and the input file. The diagram can also be saved as a PDF using the Export to PDF option of the FILE menu. To make changes to the diagram after it is opened, click on the Input mode menu item of the Diagram menu. This option switches the diagram from an output diagram to an input

diagram where changes to the diagram can be made. The window on the right-hand side shows the input file.

### Diagram From Input

The Diagrammer can be used to view a diagram created using an input without an analysis, with or without data. Open an input file in the Editor and go to the Mplus menu. Select Get diagram without analysis (data) or Get diagram without analysis (no data). Then click on the RUN button. Once the input is processed, the diagram can be viewed by using the View diagram menu item of the Diagram menu. Changes to the diagram can be made in two ways. The first way is to open the input file in the Mplus Editor, make changes to the input, and process the input. The second way is to edit the diagram and save the changes to the diagram. The diagram can be edited using the drawing tools described above. To edit the diagram, select Input mode from the Diagram menu. Then select any of the drawing tools, for example, the arrow to change the diagram. If a model contains parameter labels, they can be added to the diagram by selecting Show parameter labels from the View menu. A title can be added to the diagram by using the Add caption button or menu item. Once the diagram has been changed, save the diagram with an mdg extension by using the Save option of the File menu.