

SPSS PC Version 10: Scatterplot¹

The following uses a set of variables from the "1995 National Survey of Family Growth" to demonstrate how to use some procedures available in SPSS PC Version 10.

Correlation analysis allows us to examine the strength and the direction of the relationship between variables measured at the interval-ratio level. SPSS offers a lot of flexibility in examining relationships using correlation analysis, scatterplots and, as you'll see next time, regression techniques.

Using SPSS to create a scatterplot:

- Scatterplots allow you to get a visual handle on the nature of the relationship between two variables (a bivariate relationship). Choose *Graphs*, then *Scatter*. You will be prompted to choose the type of scatterplot you want to create. For our purposes (looking at the relationship between two variables), "Simple" will suffice. Click on this option and hit *Define*. You will then be prompted to choose the variables for your X-axis and your Y-axis. For this example, the X-axis variable (the independent variable) will be *momed* and the Y-axis variable (the dependent variable) will be *educ*. After your variables are chosen, hit "OK." The syntax for this command is:

```
GRAPH  
/SCATTERPLOT(BIVAR)=momed WITH educ  
/MISSING=LISTWISE .
```

- The result will be the basic scatterplot you are interested in, but you may want to make adjustments to it. In SPSS version 10.0, most such adjustments are made using the SPSS "chart editor." **To open the chart editor, use your mouse to point anywhere on the pie displayed in the SPSS Output Viewer and double click with your mouse.** This opens the separate "SPSS Chart Editor" window with a whole new set of menu options for you to play with. Syntax for these commands are described in the **IGRAPH** (interactive graph) section of the documentation. Here are some things you can do:
- **Redefine the X-axis (or the Y-axis):** Sometimes SPSS chooses a crazy range to display the values of one or both of the variables. For example, it may have the X-axis start at -10 and end at 30 for an education variable with actual values falling between 0 and 20. To alter this funkiness, choose *Chart* and then *Axis* in the "SPSS Chart Editor." Click on the axis you want to modify and then hit *OK*. You will see a dialogue box with a variety of options, including one in which you can choose a pair of minimum and maximum values for the axis. Specify these and hit *OK*. This will change the look of your scatterplot in the Output Editor.
- **Fit a regression line:** You may also want to fit a least-squares regression line to your scatterplot, just to see the basic relationship between the variables. To do this, choose *Chart* and then *Options* in the "SPSS Chart Editor." Then, in the "Fit Line" section of the dialogue box that comes up, click on the box next to "Total" then hit "OK." In the Output Editor you will see a regression line fit onto your scatterplot.

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