Using SPSS, Chapter 3: Statistical Tables and Graphics

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SPSS’s Chart Builder

1. Click the **Graphs** menu item and select **Chart Builder** ....

2. You are given the opportunity to Define Variable Properties. If you are confident that your variables are properly defined, select **OK**.

3. The **Chart Builder** console will open (see below).

4. Most of the charts and graphs will be created from this window. When you’re done, click **OK** and the graph or chart will appear in the SPSS Viewer.
Creating Histograms

The following sequence of screenshots demonstrates how to get histograms for more than one category of data into the same figure but the same process can be used to create a single histogram. The data contains the test scores for 42 males and 30 females.

- Be sure your data is in the standard SPSS format where rows=cases and columns=variables.

- You can actually select any of the Histogram options but the Simple Histogram is very flexible.

- Each Row = Case
- Each Column = Variable
- Assign labels to the values found in the nominal variable Gender.

- Click on the Graphs Tab
- Select Chart Builder
- Select Histogram from the Gallery tab.
- Choose the first option (Simple Histogram) and drag it to the chart preview area.
- Drag the numeric variable to the x-axis.
• If you want to group histograms according to category (like gender) there are a few options. If you don’t have different categories of data, you don’t have to do this step.

Select the **Groups/Point ID** tab and check

- **Grouping/Stacking variable:** to stack the bars on top of each other.
- **Rows panel variable:** to place the histograms on top of each other.
- **Columns panel variable:** Places the histograms next to each other.

Select the categorical variable used for grouping and drag it to the new open box.

- Click on Element Properties ...

• Left: More grouping options.  Right: Changing the classes to 90, 80, 70, 60 etc..
- Two Histograms!

- The histogram (or grouped histograms) appear in the Statistics Viewer.

- You can double click on the graph and make some adjustments with the Chart Editor if you want.

- If you double-click on the graph the Chart Editor window will open. This gives many options for editing your histogram(s).

- If you double click on the histogram from this window, you get the properties window where you can alter Chart Size, Fill & Border and others. The design options are bountiful.
Creating a Scatter Plot

1. Open or create the data.
2. Click the **Graphs** menu item and select **Chart Builder** ....
3. Select **Scatter/Dot** from the Gallery Tab of the Chart Builder window.
4. Drag the icon for the chart you want into the preview window.
5. Drag the $x$-variable to the $x$-axis and the $y$-variable to the $y$-axis.
6. Click **OK** and the plot appears in the SPSS Viewer.
7. Double-clicking on the graph brings up the Chart Editor with many options.
Getting Started

When you start SPSS there are two windows that are displayed.

- **SPSS Statistics Data Editor**: This is the window contains the actual data and data properties. There are two tabs at the lower left corner of this window.
  - **Data View**: When you click this tab you actually see the data arranged by column. The data should be in standard format where rows = cases and columns = variables.

- **Variable View**: This is where you define various attributes for each variable.

- **SPSS Statistics Viewer**: This is the window that depicts that actual commands used to perform tasks such as opening data, displaying graphs, conducting tests, etc. This is also the window where the results are displayed such as tables and graphs.
Creating and Importing Data

- There are two ways to get data into SPSS.
  - You can enter the data by typing it directly into the data editor.
  - You can open an existing data file by selecting the **File** tab, then **Open** then **Data...**
    Then select the type of file from the list of options. If it is not already an SPSS (.sav) data file, you will be prompted to answer some questions. For example, if you open an Excel file it may ask which worksheet and whether or not the first row contains labels.

- Make sure your data is formatted as described below.
  - **Rows = Cases**
    Each row represents a case such as each respondent to a questionnaire.
  - **Columns = Variables**
    Each column represents a variable being tracked or measured. For example, the answers to a specific question on a questionnaire defines it’s own variable (column). As such, each row represents an individual case for all variables.
  - **Cells contain values**
    Each cell contains a single value of a variable for a case.

It is possible to enter data in the form of a frequency table but then you must do some alterations before analyzing such data.

- Once you have the data opened in the data editor, click the **Variable View** tab at the bottom of the data editor. In this view, each variable is now a row and you must make sure all your variables are defined appropriately. The most important distinctions are
  - **TYPE**: The most common types are
    * **Numeric**: Used for quantitative data. These are numbers with no commas and a period delimiting the decimal places. SPSS will not allow you to enter non-numeric characters into a cell of numeric type.
    * **Date**: Used for dates or times from a menu of formats.
    * **String**: Used for qualitative data. Avoid symbols such as *, -, +, ?, etc.
  - **Measure**: There are three levels of measurement.
    * **Scale** is for ratio or interval levels of measurement.
    * **Ordinal** is for ordinal or ranked data.
    * **Nominal** is for qualitative data.
  - **Values**: If you have numeric values representing qualitative data such a 1=male and 0=female, you will probably want this to be labelled accordingly in graphs and outputs. Click on the cell in the **Values** column for that variable and assign labels for each value.