

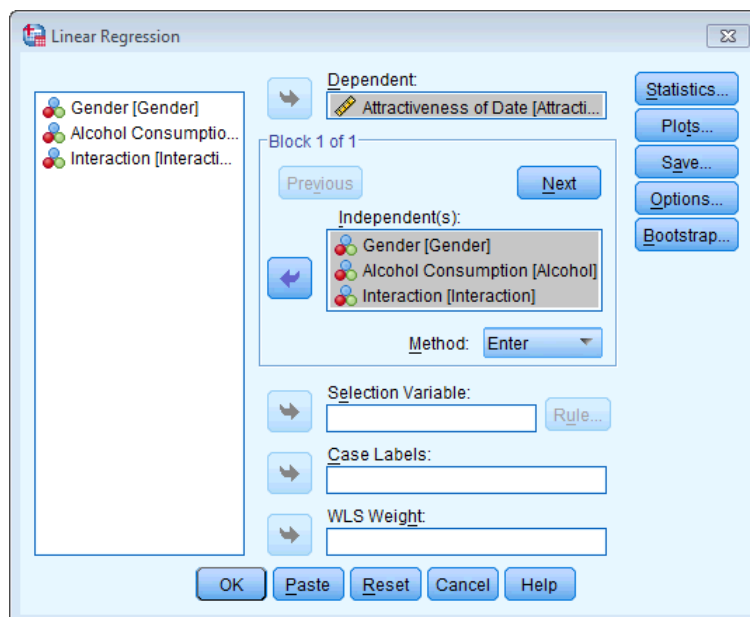
## Chapter 13: Factorial ANOVA

### Self-test answers



**SELF-TEST** The file **GogglesRegression.sav** contains the dummy variables used in this example. Just to prove that all of this works, use this file and run a multiple regression on the data.

To get to the main *regression* dialog box select **Analyze** **Regression** **Linear...**. Select the outcome variable (**Attractiveness**) and then drag it to the box labelled *Dependent* or click on . We want to specify both predictors and their interaction in the same block. To specify the predictor variables, select **Gender**, **Alcohol** and the **Interaction** and drag them to the box labelled *Independent(s)* or click on . Underneath the *Independent(s)* box there is a drop-down menu for specifying the *Method* of regression. The default option is forced entry, and this is the option we want. We just want to run a basic analysis, so we can leave all of the default options as they are and click on .



**SELF-TEST** Use the chart builder to plot a line graph (with error bars) of the attractiveness of the date with alcohol consumption on the x-axis and different coloured lines to represent males and females.

To do a multiple line chart for means that are independent (i.e., have come from different groups) we need to double-click on the multiple line chart icon in the chart builder (see the book chapter). All we need to do is to drag our variables into the appropriate drop zones. Select **Attractiveness** from the variable list and drag it into Y-Axis?; select **Alcohol** from the variable list and drag it into X-Axis?; finally, select the **Gender** variable and drag it into Cluster on X: set color. This will mean that lines representing males and females will be displayed in different colours. Select error bars in the *properties* dialog box and click on Apply to apply them to the chart builder. Click on OK to produce the graph.

The image shows two windows from SPSS. The left window is the 'Chart Builder' dialog, which is configured to create a line chart. The Y-axis is labeled 'Mean Attractiveness of Date' and the X-axis is 'Alcohol Consumption' with categories 'None', '2 Pints', and '4 Pints'. The chart is clustered by 'Gender' (Male and Female). The 'Element Properties' dialog on the right is open for 'Line1'. It shows the 'Statistics' section with 'Variable: Attractiveness of Date' and 'Statistic: Mean'. The 'Display error bars' checkbox is checked, and 'Error Bars Represent' is set to 'Confidence intervals' with a 'Level (%)' of 95. The 'Interpolation' section is set to 'Type: Straight' and 'Location: Left'.

The resulting graph can be found in the book chapter.



**SELF-TEST** Plot error bar graphs of the main effects of alcohol and gender.

To do an error bar chart click on the bar chart icon in the chart builder (see the book chapter). All we need to do is to drag our variables into the appropriate drop zones. Select **Attractiveness** from the variable list and drag it into Y-Axis?, then select **Alcohol** from the variable list and drag it into X-Axis?. Select error bars in the properties dialog box and click on Apply to apply them to the chart builder. Click on OK to produce the graph.

To do the graph of the gender main effect just drag **Gender** into the JAGSP drop zone to replace **Alcohol**. The respective dialog boxes are shown below. The completed (edited) graphs are in the book.

