Activity 3.1: Simple Linear Regression

The dataset that accompanies Activity 3.1, Dataset_3.1.xlxs shows the number of hours studied and the exam score received by 20 students.

1. Import the dataset into SPSS. Save the file as Dataset_3.1.sav.
2. Use a scatter plot to visualize the data.
    a. Click the **Graphs** tab, then click **Chart Builder**:
    b. In the **Choose from** menu, click and drag **Scatter/Dot** into the main editing window. Then drag the variable **hours** onto the x-axis and **score** onto the y-axis.
    c. click **OK**
3. Fit a simple Linear Regression model
    a. Click the **Analyze** tab, then **Regression**, then **Linear**
    b. In the new window that pops up, drag the variable **score** into the box labeled Dependent and drag **hours** into the box labeled Independent. Then click **OK**.
4. Interpret the results in your own words.
5. Report the results. A sample report is given below.

    A simple linear regression was performed to quantify the relationship between hours studied and exam score received. A sample of 20 students was used in the analysis.

    Results showed that there was a statistically significant relationship between hours studied and exam score ($t = 4.297$, $p < 0.000$) and hours studied accounted for 50.6% of explained variability in exam score.

    The regression equation was found to be:

    Estimated exam score = 73.662 + 3.342(hours)*

    Each additional hour studied is associated with an increase of ***3.342*** *in exam score, on average.*

★ Please create a copy of the Excel file and use the duplicate to complete the activity. Ensure no changes are made to the shared file