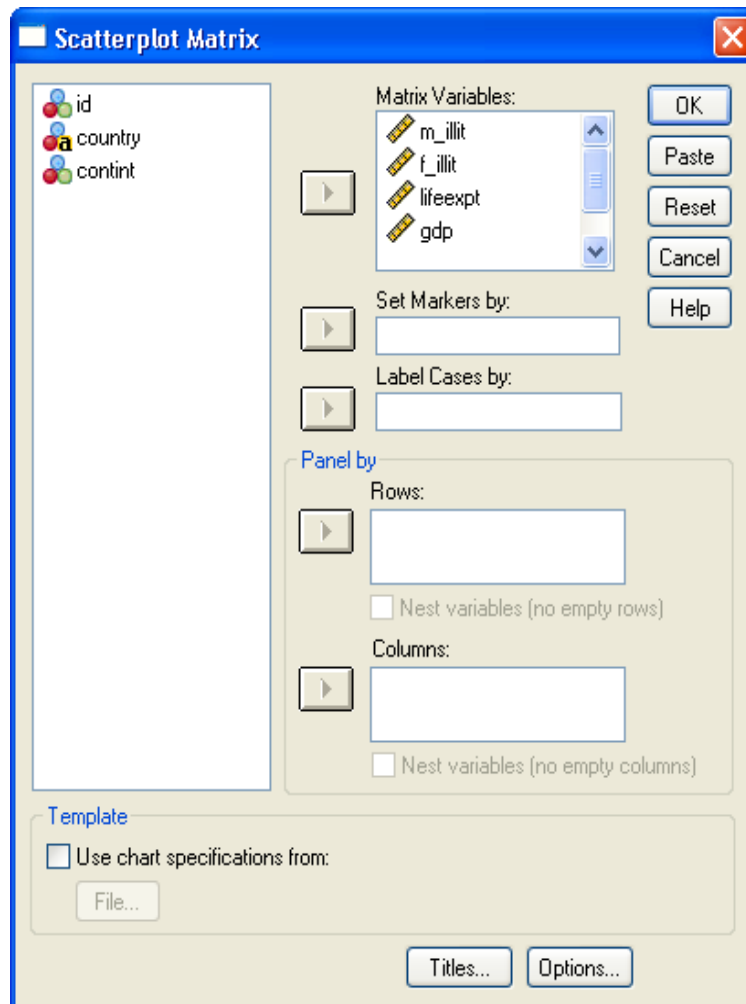
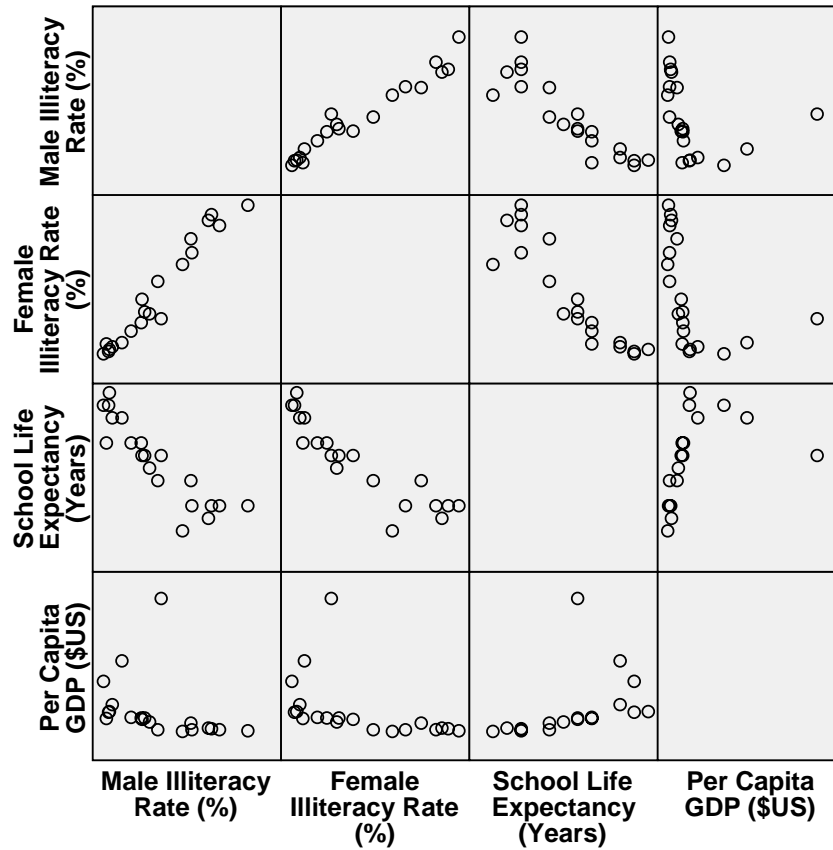


Answers to Exercise 6.6 (p. 216)

Before calculating correlation coefficients it is important first to check what the nature of the relationships are between the variables concerned. Fortunately, rather than having to create a separate scatterplot for all of the differing combinations of indicators in the **international.sav** dataset, it is possible to get a quick snapshot by using the Matrix Scatter function. Begin by calling up the procedure **Graphs** → **Legacy Dialogs** → **Scatter/Dot...** and then choose the option for 'Matrix Scatter'. Put all four of the scale variables into the 'Matrix Variables:' field as shown and click 'OK'.



You should get the scatterplot matrix shown overleaf:



As can be seen, the relationships between male and female illiteracy rates and also School life expectancy are all broadly linear and so we can use the Pearson correlation coefficient for these. However, all of the relationships involving per capita GDP are not linear and so we should use the alternative Spearman correlation coefficient instead. Using the **Analyze** → **Correlate** → **Bivariate...** procedure you should get the following:

Male Illiteracy and Female Illiteracy	$r_p = 0.974$
Male Illiteracy and School Life Expectancy	$r_p = -0.893$
Male Illiteracy and Per Capita GDP	$r_s = -0.743$
Female Illiteracy and School Life Expectancy	$r_p = -0.904$
Female Illiteracy and Per Capita GDP	$r_s = -0.818$
School Life Expectancy and Per Capita GDP	$r_s = 0.866$