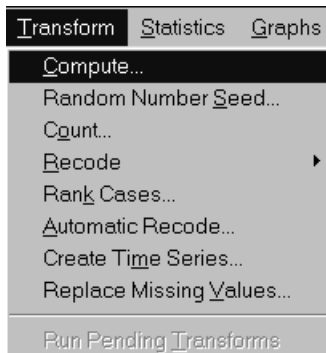


WINE CONSUMPTION AND HEART DISEASE

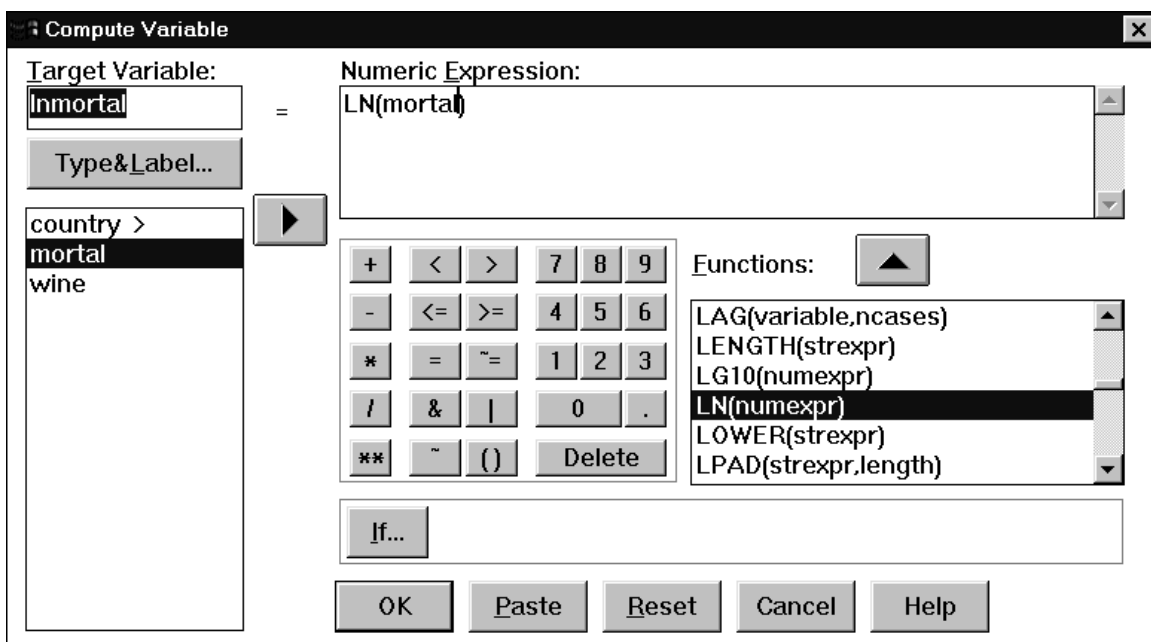
7. Displaying and Describing the Data

In this part, we will demonstrate how to use SPSS to produce the computer outputs we referred to in Sections 3 and 4. There are hyperlinks between the section and Sections 3 and 4 containing the statistical outputs.

Open the file *wine.sav* with the data in the study. It consists of three columns, named *COUNTRY*, *WINE*, and *MORTAL*. As a scatterplot of the data will be obtained for the log-transformed values of the response variable (*MORTAL*) and the explanatory variable (*WINE*), we will demonstrate first how to carry out the transformation with SPSS. Click on *Transform* in the menu and then on *Compute...*



The *Compute Variable* dialog box is displayed. In the *Target Variable* box enter the name of the new variable as *lnmortal*. Transfer the natural logarithm function LN from the *Functions* box to the *Numeric Expression* box by clicking on the function name and then on *>*. Then move in the same way the variable *mortal* to the *Numeric Expression* box. The dialog box should have the following form:



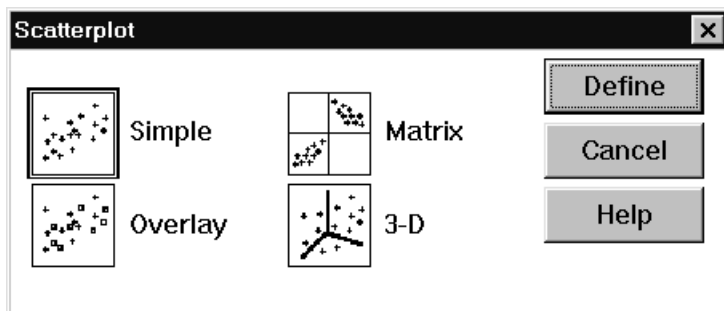
Click on OK. As a result, the new variable *lnmortal* is obtained in one of the columns of the data file. In the same way, you can obtain the variable *lnwine*, which is defined as the natural logarithm of *WINE*.

Now we will demonstrate how to obtain a scatterplot of *lnmortal* versus *lnwine*. The instructions how to obtain scatterplots in SPSS are included in the *Charts* section of the *Introduction to SPSS for Windows* module. For your convenience we will demonstrate how to use the instructions in our case study.

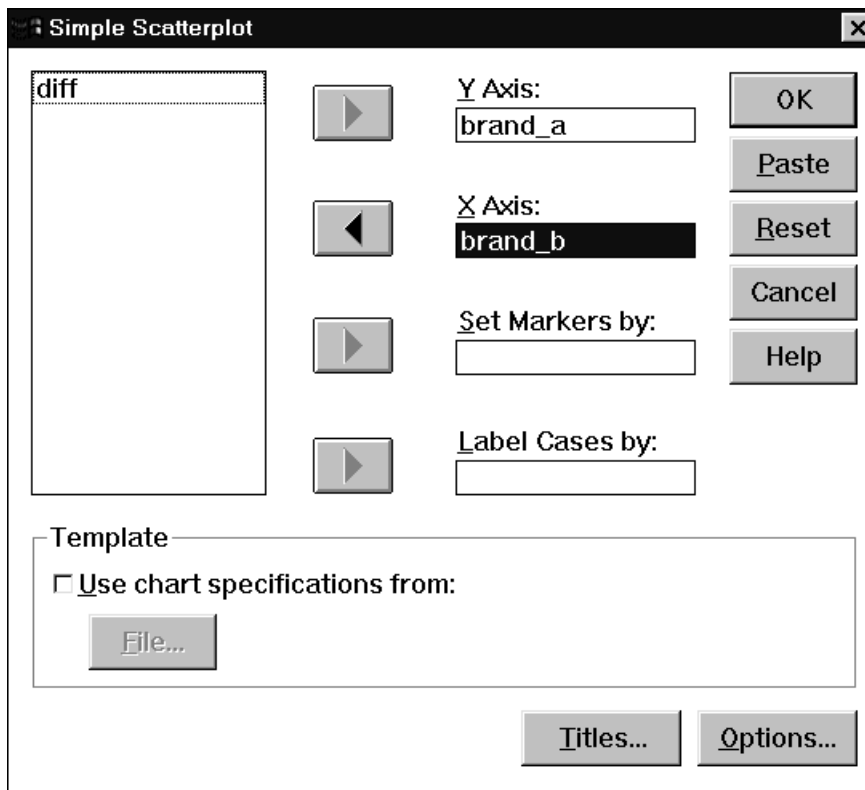
Select *Graphs* in the main menu, and choose *Scatter...*. You will obtain the following dialog box:



After clicking on *Scatter...* you will obtain the following dialog box:



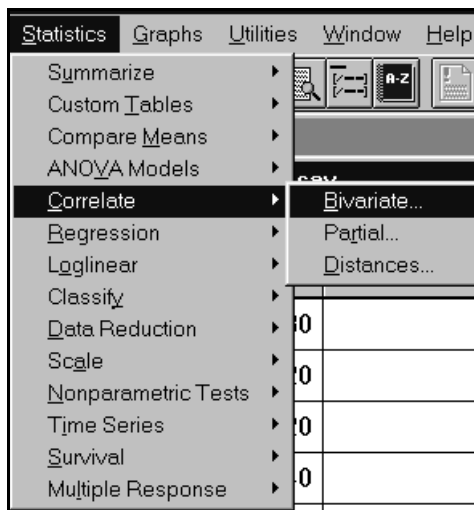
Click on *Simple*, and then on *Define*. The *Simple Scatterplot* dialog box will be displayed. In order to obtain a scatterplot of the variable *lnmortal* versus *lnwine*, the dialog box displayed should be filled out as follows:



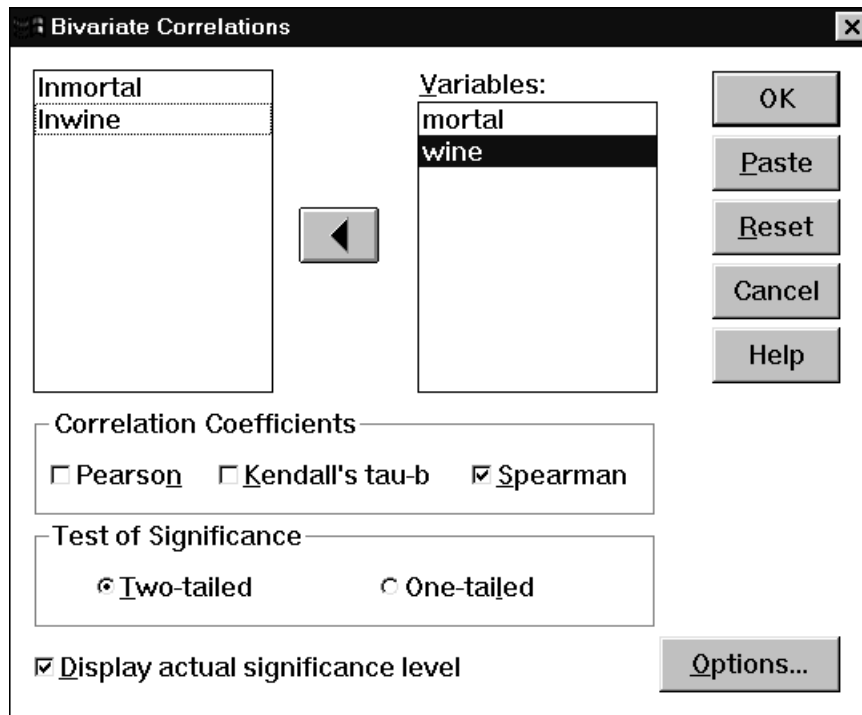
Click on OK to obtain a scatterplot displayed in **Section 3.2**.

The strength and direction of the monotonic relationship between heart disease mortality and wine consumption (both variables on the log scale) can be measured by the Spearman correlation coefficient. On the other hand, the strength and direction of the linear association between heart disease mortality and wine consumption (both variables on the original scale of measurement) can be measured by the Pearson correlation coefficient.

In order to obtain the correlation coefficients for the data, click on *Statistics* in the main menu, and then on *Correlate...* The following submenu will be displayed:



Clicking on *Bivariate...* opens the *Bivariate Correlations* dialog box. In the left box the names of the four variables *mortal*, *wine*, *lnmortal*, and *lnwine* are displayed. Transfer the variable *mortal* from the left box to the *Variables* box by clicking on the variable name and then on $>$. Then move in the same way the variable *wine* to the *Variables* box. Check the *Spearman* option in the *Correlation Coefficients* check box. The dialog box should have the following form:



Click OK to obtain the Spearman correlation coefficient for *mortal* and *wine*. Then open the *Bivariate Correlations* dialog box again, transfer the variables *mortal* and *wine* to the left box, and transfer the variables *Inmortal* and *Inwine* to the *Variables* box. Check the *Pearson* option in the *Correlation Coefficients* check box. Click OK to obtain the Pearson correlation coefficient.

The output is displayed in **Section 4**.