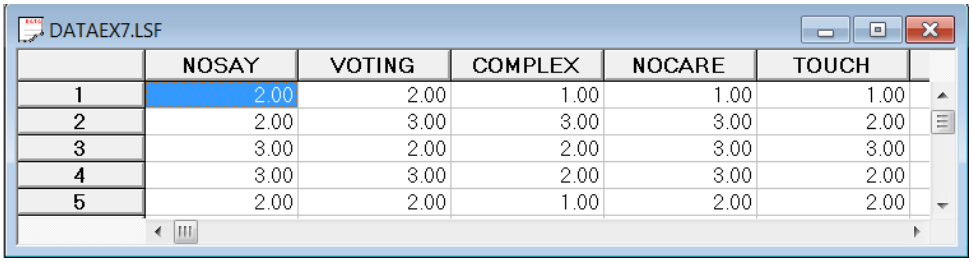
Bootstrap samples from Political Survey data

Suppose the original data consists of N cases and we want to draw K samples of size n. The drawing is done with replacement. The number n may be smaller than, equal to, or larger than N. For each of the K samples, summary statistics can be computed and saved in a file.

It is assumed that the data does not contain missing values. If it does, bootstrap examples will be drawn from the listwise sample remaining after deletion of all cases with missing values.

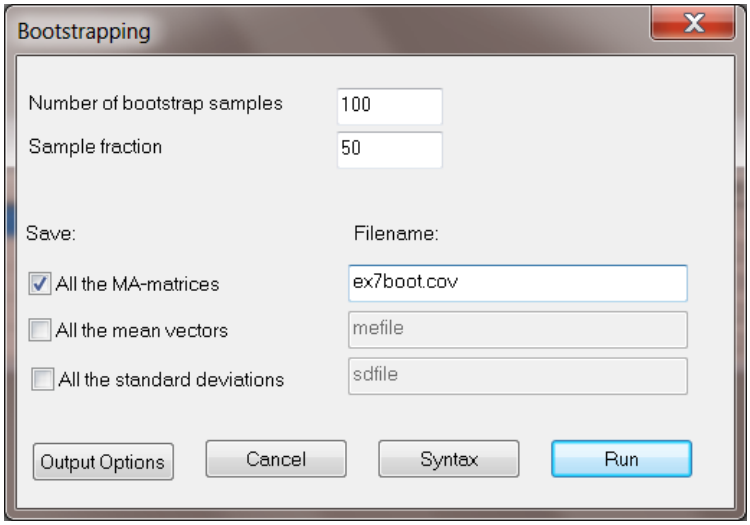
To illustrate how this can be done using the GUI, suppose 100 bootstrap samples of size 148 each are to be drawn from the LISREL system data file **dataex7.lsf**. This data set is obtained by importing the SPSS *.**sav** file, **dataex7.sav** from the **PRELIS examples** folder. See the section on Exploratory data analysis of political data in this guide for more information on how to import data.

To open the file **dataex7.lsf**, select the **Open** option on the **File** menu to obtain the **File Open** dialog box. Select the folder and from the **Files of type** drop-down list box **PRELIS Data** (***lsf**). When **dataex7.lsf** is selected, clicked **OK** to display the data set.



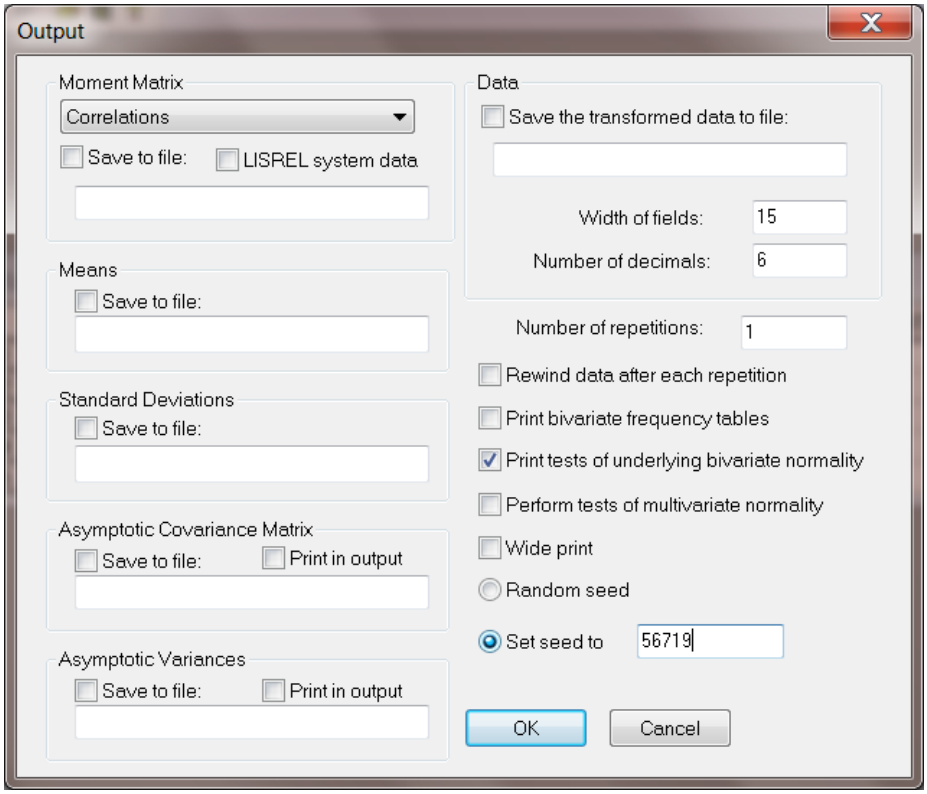
	NOSAY	VOTING	COMPLEX	NOCARE	TOUCH
1	2.00	2.00	1.00	1.00	1.00
2	2.00	3.00	3.00	3.00	2.00
3	3.00	2.00	2.00	3.00	3.00
4	3.00	3.00	2.00	3.00	2.00
5	2.00	2.00	1.00	2.00	2.00

Select the **Bootstrapping** option from the **Statistics** menu to obtain the **Bootstrapping** dialog box.



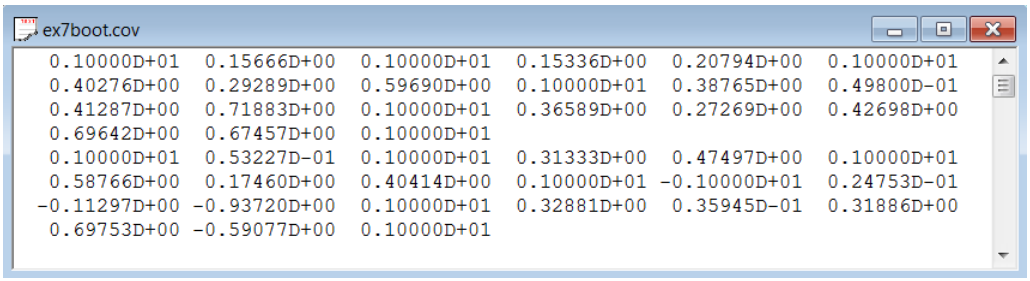
Since the sample fraction is 50, each bootstrap sample will be 50% of the original sample size of 297, that is, of size 148. Select the **Save: all the MA-matrices** option and choose a file name for a file that will contain 100 correlation matrices.

Click **Output Options** on the **Bootstrapping** dialog box and choose **Correlations** for the matrices to be computed.



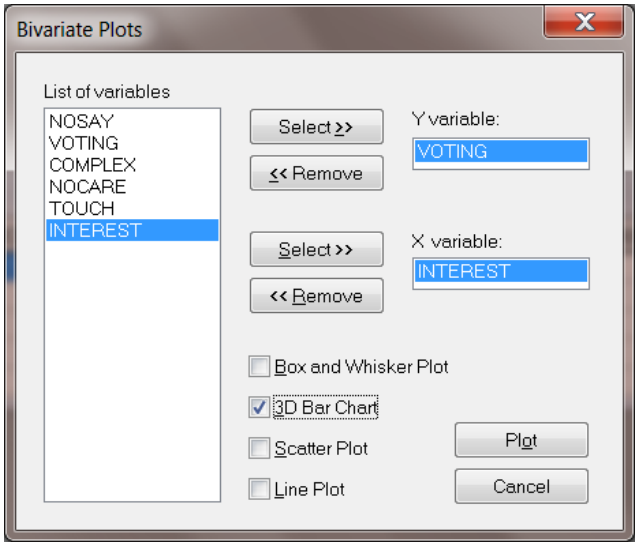
The **Output** dialog box also allows you to set the random number generator seed, so that this run can be replicated exactly. For this example, a value of 56719 was chosen. Click **OK** to return to the **Bootstrapping** dialog box and click **Run** to start the PRELIS analysis.

After this run, the file **bootex7.cov** contains 100 correlation matrices, each with 21 items (the lower triangular part of a 6 x 6 correlation matrix). The correlation matrices for the first two bootstrap samples are:

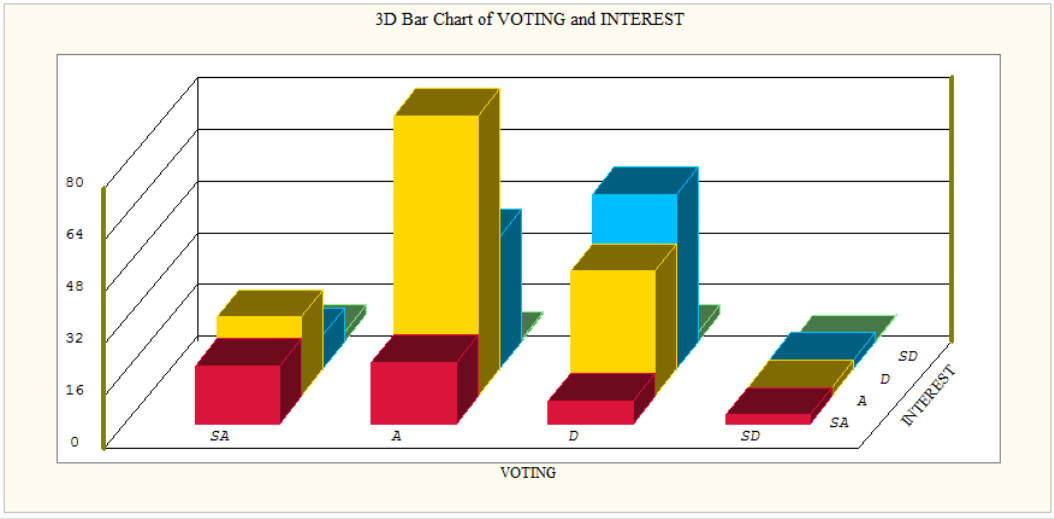


Note that the numbers are given in so-called scientific notation, where D+01 indicates that the number is to be multiplied by 10, D-01 indicates multiplication by 0.1, etc.

A 3-D bar chart of VOTING and INTEREST can be obtained by selecting the **Bivariate** option from the **Graphs** menu.



After completing the **Bivariate Plots** dialog box as shown above, click **Plot**. The resulting plot is shown below:


3D Bar Chart of VOTING and INTEREST
80
64
48
32
16
0
SA
A
D
SD
VOTING
SA
A
D
SD
INTEREST