A structural equation model

Barnes & Kaase (1979) conducted a cross-national survey to obtain information on conventional and unconventional forms of political participation in industrial societies. The survey is known as the Political Action Survey. The survey included several attitude and perception statements to which the respondents had to respond with one of:

- agree strongly
- agree
- disagree
- disagree strongly
- do not know
- no answer

Amongst others, the following statements were administered to each USA respondent.

- "People like me have no say in what the government does." (NOSAY)
- "Sometimes politics and government seem so complicated that a person like me cannot really understand what is going on." (COMPLEX)
- "I don't think that public officials care much about what people like me think." (NOCARE)
- "Generally speaking, those we elect to Congress in Washington lose touch with people pretty quickly." (TOUCH)
- "Parties are only interested in people's votes but not in their opinions." (INTEREST)

The file **usa.LSF** contains the responses to these statements from a sample from 1076 United States respondents, along with their

- gender (GENDER)
- education level (EDUCAT)
- age (AGE)
- left-right score (LEFTRIGH)
- The first portion of **usa.LSF** is shown in the following LSF window.

NOSAY and COMPLEX are indicators of political efficacy (Efficacy). NOCARE, TOUCH and INTEREST are indicators of political responsiveness (Respons). GENDER, LEFTRIGH, EDUCAT and AGE are explanatory variables for efficacy (Efficacy) and responsiveness (Respons). A path diagram of the MIMIC model is shown below.
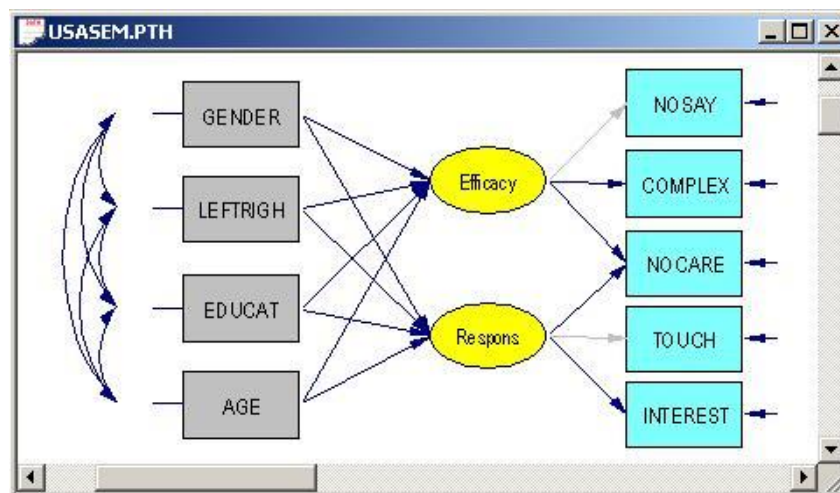
Generating the Matrix Files

Use the **Open** option on the **File** menu to load the **Open** dialog box. Select the **LISREL data (*.lsf)** option from the **Files of type:** drop-down list box. Browse for the file **usa.LSF**.

Click the **Output Options** option on the **Statistics** menu to load the **Output** dialog box. Select the **Covariances** option from the drop-down list box in the **Moment Matrix** section. Check the **Save to File** checkbox in the **Moment Matrix** section. Enter the name **USA.COV** in the string field in the **Moment Matrix** section. Check the **Save to File** checkbox in the **Asymptotic Covariance Matrix** section. Enter the name **USA.ACM** in the string field in the **Asymptotic Covariance Matrix** section to produce the following **Output** dialog box.
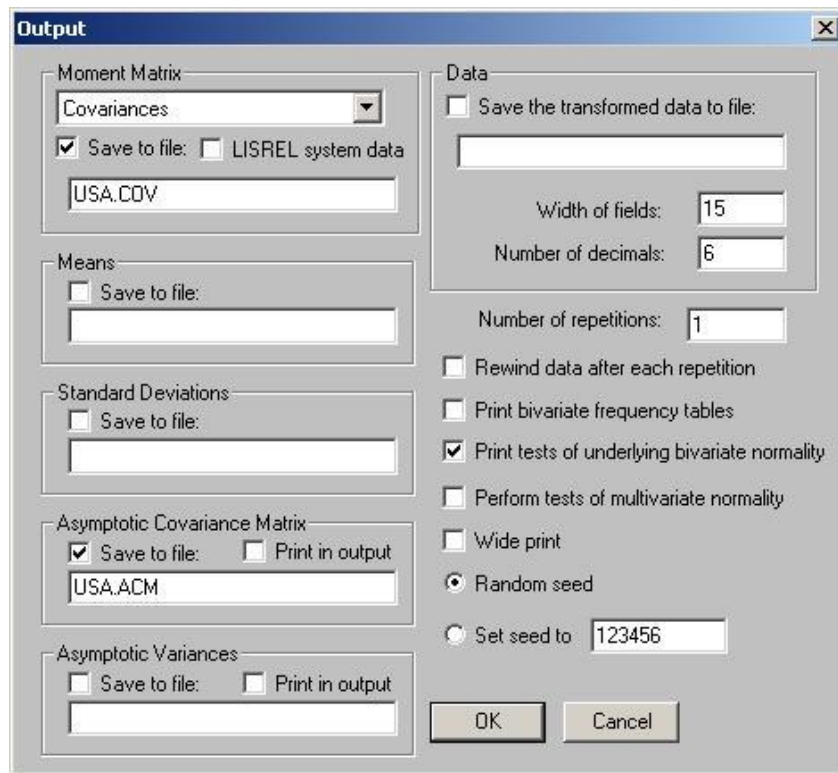
Click on the **OK** button to generate the text editor window for **USA.OUT**. Select the **Open** option on the **File** menu to load the **Open** dialog box. Select the **Syntax Only** option from the **Files of type:** drop-down list box. Browse for the file **USA.PRL**. Click on the **Open** button to open the text editor window for **USA.PRL**. Insert the command

Fixedvariables GENDER - AGE

just after the **SY** command to produce the following text editor window for **USA.PRL**.
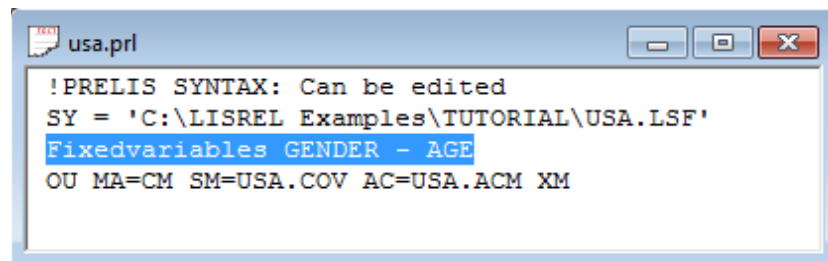
- Line 1 provides a title for the syntax file.
- Line 2 specifies the raw data source.
- Line 3 specifies the variables GENDER, EDUCAT, LEFTRIGH and AGE as covariates.
- Line 4 specifies that the covariance matrix should be computed and written to the text file **USA.COV** and that the estimated asymptotic covariance matrix of the variances and covariances should be computed and written to the binary file **USA.ACM**.

Click on the **Run PRELIS** toolbar icon to produce the text editor window for **USA.OUT**.

Fitting the MIMIC Model to the Ordinal Data Set

Select the **New** option on the **File** menu to load the **New** dialog box. Select the **Syntax Only** option from the list box on the **New** dialog box to open the **SYNTAX1** text editor window. Select the **Save As** option on the **File** menu to load the **Save As** dialog box. Select the **SIMPLIS Syntax (*.spl)** option on the **Save as type:** drop-down list box. Enter the name **USASEM.SPL** in the **File name:** string field. Click on the **Save** button to save the file **USASEM.SPL**. Enter the following commands into the text editor window for **USASEM.SPL**.

- Line 1 provides a title for the analysis.
- Lines 2 to 4 specify labels for the observed variables.
- Lines 5 and 6 specify the matrix files for the covariance matrix and the estimated asymptotic covariance matrix of the variances and covariances respectively.
- Line 7 specifies the number of observations in *USA.LSF*.
- Line 8 specifies labels for the latent variables.
- Lines 9 to 13 specify the MIMIC model to be fitted to the data.
- Line 14 specifies the Weighted Least Squares (WLS) method for ordinal variables and that the results should be printed in terms of the LISREL model for the MIMIC model.
- Line 15 requests a path diagram.
- Line 16 indicates that no more SIMPLIS commands are to be processed.

Click on the **Run LISREL** toolbar icon to produce the following **PTH** window.