



SIMPLIS Syntax Guide

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Please download the examples from our website at <https://ssicentral.com/index.php/products/lisrel/lisrel-examples> and unzip them into a convenient folder location. The examples shown in the manual uses 'C:\LISREL Examples' and you are more than welcome to use the same or a different location. Please note that the actual location may be different on your machine.

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1 SIMPLIS Syntax

1.1 The structure of the SIMPLIS syntax file

The SIMPLIS syntax file, generated by the graphical user interface of LISREL, can also be prepared manually by using the LISREL text editor or any other text editor such as Notepad and WordPad. The general structure of the SIMPLIS syntax file depends on the data to be processed. If the raw data file to be processed is a LISREL system data file (**LSF**), or a text file the SIMPLIS syntax file has the following structure.

TITLE	Optional
<string>	
RAW DATA FROM FILE <lsfname> or <filename>	Required
ANALYZE CORRELATIONS	Optional
MISSING VALUE CODE <value>	Optional
MULTIPLE IMPUTATION WITH <imp method>	Optional
STRATUM <label>	Optional
CLUSTER <label>	Optional
WEIGHT <label>	Optional
CASEWEIGHT <label>	Optional
\$ADAPQ(n) <options>	Optional
\$CLUSTER <label>	Optional
\$PREDICT <labels>	Optional
LATENT VARIABLES	Optional
<labels>	
RELATIONSHIPS	Optional
<relationships>	Required
SET <instruction>	Optional
ROBUST ESTIMATION	Optional
LISREL OUTPUT <options>	Optional
PATH DIAGRAM	Optional
END OF PROBLEM	Optional

where <string> denotes a character string, <label> denotes a case-sensitive variable name used in the raw data or moment matrix file, <labels> denotes a list of case-sensitive variable names used in the raw data or moment matrix file or for the latent variables of the model, <lsfname> or <filename> denotes the complete name (including the drive and folder names) of the LSF file or the text file, <value> denotes any real number, <impmethod> is either EM or MC, <relationships> denotes a list of model expressions and <instruction> denotes a parameter statement. <options> denotes a list of options for the analysis.

If the data to be analyzed are summarized in a DSF, the structure of the SIMPLIS syntax file is as follows.

TITLE	Optional
<string>	
SYSTEM FILE FROM FILE <dsfname>	Required
ASYMPTOTIC COVARIANCE MATRIX FROM FILE <acmfilename>	Optional
LATENT VARIABLES	Optional
<labels>	
RELATIONSHIPS	Required
<relationships>	
SET <instruction>	Optional
LISREL OUTPUT <options>	Optional
PATH DIAGRAM	Optional
END OF PROBLEM	Optional

where <dsfname> denotes the complete name (including the drive and folder names) of the DSF file.

The SIMPLIS syntax file has the following structure if the data file to be processed is in the form of a text file.

TITLE	Optional
<string>	
OBSERVED VARIABLES	Required if COV. or CORR. MATRIX is not selected
<labels>	
RAW DATA FROM FILE <filename>	Required
MISSING VALUE CODE <value>	Optional
STRATUM <label>	Optional
CLUSTER <label>	Optional
WEIGHT <label>	Optional
CASEWEIGHT <label>	Optional
\$CLUSTER <label>	Optional
\$PREDICT <labels>	Optional
COVARIANCE MATRIX FROM FILE <filename>	Required if RAW DATA or CORR. MATRIX is not selected
CORRELATION MATRIX FROM FILE <filename>	Required if RAW DATA or COV. MATRIX is not selected
ASYMPTOTIC COVARIANCE MATRIX FROM FILE <acmfilename>	Optional

MEANS FROM FILE <filename>	Optional
STANDARD DEVIATIONS FROM FILE <filename>	Optional
SAMPLE SIZE <number>	Required
LATENT VARIABLES <labels>	Optional
RELATIONSHIPS <relationships>	Optional Required
SET <instruction>	Optional
LISREL OUTPUT <options>	Optional
PATH DIAGRAM	Optional
END OF PROBLEM	Optional

where <filename> denotes the complete name (including the drive and folder names) of a text file, <acmfilename> denotes the complete name (including the drive and folder names) of the binary file containing the estimated asymptotic covariance matrix of the sample moments and <number> denotes a positive integer.

The three general structures of the SIMPLIS syntax file listed here assume a single-group structural equation model. In the case of a multiple group structural equation model, these structures apply to each GROUP command. The only exception is the END OF PROBLEM command, in the sense that only one should be specified as the final command of the SIMPLIS syntax file for the multiple group analysis.

The SYSTEM FILE FROM FILE command is a **required** command only if a DSF is used. If the data to be analyzed do not come from a DSF or LSF, then the OBSERVED VARIABLES paragraph, the SAMPLE SIZE command, and one of the RAW DATA FROM FILE, COVARIANCE MATRIX FROM FILE, or the CORRELATION MATRIX FROM FILE commands are **required**. The LATENT VARIABLES paragraph is **required** only if the model includes latent variables. The RELATIONSHIPS or PATHS commands are optional but some relationships or paths are **required**. The remaining SIMPLIS commands are all **optional**.

One of the SYSTEM FILE FROM FILE or RAW DATA FROM FILE commands or the OBSERVED VARIABLES paragraph should be the first command following the TITLE paragraph. If the END OF PROBLEM command is included, it must be the final command. The other commands and paragraphs can be entered in any order.

In the following sections, the SIMPLIS commands and paragraphs are discussed separately in alphabetical order.

1.2 \$ADAPQ(n) command

The \$ADAPQ(n) command is used to specify the Adaptive Quadrature method of estimation for a mixture of ordinal and continuous variables.

Syntax

\$ADAPQ(Npts) <options>

where <options> are one or more of the following:

- LINKTYPE
- EQTH
- GR(Niter)

Npts = user-supplied number of quadrature points. Typically one would assign this according to the following guidelines:

- One latent factor; Npts = 8 or more
- Two and three latent factors; Npts varies from 5 to 10
- Four and five latent factors; Npts varies from 4 to 6
- Six to ten (maximum) latent factors; Npts varies from 3 to 4

LINKTYPE is one of the following link functions

- LOGIT
- PROBIT
- LOGLOG
- CLL (Complimentary log-log)

EQTH is an optional keyword; the default is thresholds are not equal.

Note that the inclusion of this keyword has a different effect on a single group versus a multiple group analysis

- Single group: Corresponding thresholds of each ordinal variable are set equal. This implies that in this case, each ordinal variable should have the same number of categories. The number of threshold-values for an ordinal variable equals the (number of categories minus one) for that variable. . For example, for 11 ordinal variables each with 7 categories, the 11 ordinal variables each has the same 6 thresholds-values.
- Multiple groups: Thresholds for each ordinal variable are set equal across groups. For example, for 6 ordinal variables each with 4 categories, each group has 18 thresholds, constrained to be equal across all groups.

GR(Niter) is an optional keyword, the default is Niter=2.

This option is used to obtain an empirical Hessian matrix based on the sum of the gradient*gradient-transpose contributions. In cases where convergence is slow, it is advisable to use Niter-values varying from 3 to 10. When fitting a new model, it is a good strategy to add this keyword with a value of 5 to check first if convergence is attained.

The **\$ADAPQ(n)** command line is typically inserted in the syntax file following the **Raw Data from file** (SIMPLIS) or **DA** (LISREL) lines.

Examples

```
Raw Data from file 'PANMOD1.LSF'  
$ADAPQ(6) PROBIT GR(5)  
Latent Variables KSI1 KSI2  
Relationships  
Etc...
```

```
DA NI=9 NO=0 NG=2 MI=-999999.0  
RA=MathBook1_US.LSF  
$ADAPQ(5) LOGIT GR(8)  
SE  
1 2 3 4 5 6 7 8 9/  
MO NX=9 NK=3 LX=FU,FI PH=SY,FR TD=DI,FR KA=FR  
LK  
CUBE APPLE GROW  
Etc...
```

```
DA NI=6 NO=0 NG=2 MI=-999999.0  
RA=efficacy_grp1.LSF  
$ADAPQ(8) LOGIT EQTH GR(5)  
SE  
1 2 3 4 5 6/  
MO NX=6 NK=2 LX=FU,FI PH=SY,FR TD=DI,FR KA=FR  
LK  
Fac1 Fac2  
Etc...
```

For further examples, see the **\orfimlex** and **\ls9ex** folders.

Mixture of ordinal and continuous variables

See, for example, the syntax files **OR11CO10_1.spl**, **OR11CO10_2.spl**, **OR16CO5_1.spl** and **OR16CO5_2.spl** in the **\Orfimlex** folder. Note that the ORFIML module uses the data definitions extracted from the LSF file definitions.

To illustrate, open the file **C:\LISREL9 Examples\ORFIMLEX\Ord11Cont10.LSF** and use the Statistics, Data Screening option to inspect the variable definitions.

If the variables are all defined as ordinal, the default, use the **Data, Define variables, Variable Type** option to change the variable type of those variables that are in fact continuous.

1.3 \$CLUSTER command

The **\$CLUSTER** command is used to specify the variable that contains the cluster information of nested data for which a multilevel structural equation modeling analysis is desired. It is an **optional**

command. For example, in the case of a standard structural equation modeling analysis, the \$CLUSTER command is omitted.

Syntax

```
$CLUSTER <label>
```

where <label> denotes the label of the cluster variable.

Example

Suppose that the primary sampling units of the complex survey are facility types and that the variable FACTYPE is used to indicate the facility type for each observation. Then, the corresponding \$CLUSTER command is

```
$CLUSTER FACTYPE
```

1.4 \$PREDICT command

The \$PREDICT command is used to specify the explanatory variables for the fixed part of a multilevel structural equation model. It is an **optional** command. For example, in the case of a standard structural equation modeling analysis, the \$PREDICT command is omitted.

Syntax

```
$PREDICT <labels>
```

where <labels> denotes the labels of the explanatory variables.

Example

Suppose that the age (AGE) and gender (GENDER) of each respondent are to be used as predictors for the fixed part of a multilevel structural equation model. For this example, the corresponding \$PREDICT command is

```
$PREDICT = AGE GENDER
```

1.5 ANALYZE CORRELATIONS COMMAND

This command causes LISREL to analyze a correlation matrix instead of the covariance matrix (default). If this command is used together with Robust Estimation, LISREL will estimate an asymptotic covariance matrix of the correlations to obtain robust standard errors and chi-squares.

Syntax

Analyze Correlations

Example

```
Raw Data from File NPV.LSF
Analyze Correlations
Latent Variables: Visual Verbal Speed
Relationships:
  'VIS PERC' - LOZENGES = Visual
  'PAR COMP' - WORDMEAN = Verbal
  ADDITION - SCCAPS = Speed
Robust Estimation
Options: DWLS
Path Diagram
End of Problem
```

1.6 AUGMENTED COVARIANCE MATRIX paragraph

The COVARIANCE MATRIX paragraph is used to provide the sample augmented covariance matrix as a part of the SIMPLIS syntax file. If the augmented covariance matrix to be analyzed is provided as part of the SIMPLIS syntax file, it is a **required** command. If the sample augmented matrix is in the form of a text file, the AUGMENTED COVARIANCE MATRIX FROM FILE command rather than the AUGMENTED COVARIANCE MATRIX paragraph is used.

Note

The augmented covariance matrix must be in lower triangular form..

Syntax

```
AUGMENTED COVARIANCE MATRIX
<values>
```

If the sample augmented matrix is provided in a fixed format, a FORTRAN type X format statement should be included. See Section 1.12 for an example of a format statement.

1.7 AUGMENTED COVARIANCE MATRIX FROM FILE command

The AUGMENTED COVARIANCE MATRIX FROM FILE command is used to specify the name of the text file that contains the sample augmented covariance matrix of the observed variables of the model. It is a **required** command only if the augmented matrix to be analyzed is in the form of a text file.

Notes

The matrix must be in lower triangular form.

Syntax

AUGMENTED COVARIANCE MATRIX FROM FILE <filename>

where <filename> denotes the name of the text file containing the sample augmented covariance matrix.

1.8 ASYMPTOTIC COVARIANCE MATRIX FROM FILE command

The ASYMPTOTIC COVARIANCE MATRIX FROM FILE command is used to specify the name of the binary file that contains the estimated asymptotic covariance matrix of the sample moments. In the case of the Robust Maximum Likelihood (RML), the Weighted Least Squares (WLS) and the Diagonally Weighted Least Squares (DWLS) methods, it is a **required** command.

Syntax

ASYMPTOTIC COVARIANCE MATRIX FROM FILE <acmfilename>

where <acmfilename> denotes the name of the binary file containing the estimated asymptotic covariance matrix of the sample moments. If the acmfilename contains blank spaces, it should be given in single quotes.

Example

Suppose that the name of the binary file with the estimated asymptotic covariance matrix of the sample variances and covariances is **NIH1.ACM** and that it is located in the folder **Projects\NIH1** on the E drive. In this case, the corresponding COVARIANCE MATRIX FROM FILE command is given by

```
ASYMPTOTIC COVARIANCE MATRIX FROM FILE 'E:\Projects\NIH1\NIH1.ACM'
```

1.9 CASEWEIGHT command

The purpose of the CASEWEIGHT command is to allow the user to specify the variable containing the weights of the individual observations to be used to compute weighted means, sample variances and covariances (correlations) and asymptotic covariance matrices of the sample variances and covariances (correlations). It is assumed that these weights are normalized in the sense that they add up to the sample size. The CASEWEIGHT command is an optional command and corresponds with the selected variable on the **Weight Cases** dialog box.

Syntax

```
CASEWEIGHT <label>
```

where <label> denotes the label of the variable containing the case weights.

Example

Suppose that the variable NEWWGT contains the weight for each observation. For this example, the CASEWEIGHT command is given by

```
CASEWEIGHT NEWWGT
```

1.10 CLUSTER command

The CLUSTER command is used to specify the variable for the primary sampling units of the complex survey. It is an **optional** command. For example, in the case of a simple random sample, the CLUSTER command is omitted. The CLUSTER command corresponds with the CLUSTER variable section on the **Survey Design** dialog box (see the *LISREL* Graphical User's Interface Guide).

Syntax

```
CLUSTER <label>
```

where <label> denotes the label of the cluster variable.

Example

Suppose that the primary sampling units of the complex survey are types of facility and that the variable FACTYPE is used to indicate the facility type for each observation. Then, the corresponding CLUSTER command is

```
CLUSTER FACTYPE
```

1.11 CORRELATION MATRIX paragraph

The correlation matrix to be processed can be specified as a part of the SIMPLIS syntax file by using the CORRELATION MATRIX paragraph. It is a **required** command only if the correlations to be processed are provided as part of the SIMPLIS syntax file. If the sample correlations are in the form of a text file, the CORRELATION MATRIX FROM FILE command rather than the CORRELATION MATRIX paragraph is used.

Syntax

```
CORRELATION MATRIX  
<values>
```

where <values> denotes the sample correlations of the observed variables in free or fixed format. If the sample correlations are listed in a fixed format, a FORTRAN format statement should be included as the first line of the CORRELATION MATRIX paragraph.

Examples

```
CORRELATION MATRIX  
1.000  
0.257 1.000  
0.521 0.245 1.000  
0.533 0.346 0.218 1.000
```

```
CORRELATION MATRIX  
(4F6.3)  
1.000  
0.257 1.000  
0.521 0.245 1.000  
0.533 0.346 0.218 1.000
```

1.12 CORRELATION MATRIX FROM FILE command

If the correlation matrix to be processed is in the form of a text file, the CORRELATION MATRIX FROM FILE command is a **required** command and is used to specify the name of the text file that contains the sample correlations of the observed variables of the model. It is also possible to specify the correlation matrix as part of the SIMPLIS syntax file. In this case, the CORRELATION MATRIX paragraph instead of the CORRELATION MATRIX FROM FILE command is used.

Syntax

```
CORRELATION MATRIX FROM FILE <filename>
```

where <filename> denotes the name of the text file containing the sample correlation matrix. If the filename contains blank spaces, it should be given in single quotes.

Example

Suppose that the sample correlations are contained in the text file **SELECT.COR**, which is located in the folder **My Projects\SELECT** on the D drive. In this case, the corresponding **CORRELATION MATRIX FROM FILE** command is given by

```
CORRELATION MATRIX FROM FILE 'D:\My Projects\SELECT\SELECT.COR'
```

1.13 COVARIANCE MATRIX paragraph

The **COVARIANCE MATRIX** paragraph is used to provide the sample covariance matrix as a part of the **SIMPLIS** syntax file. If the covariance matrix to be analyzed is provided as part of the **SIMPLIS** syntax file, it is a **required** command. If the sample covariance matrix is in the form of a text file, the **COVARIANCE MATRIX FROM FILE** command rather than the **COVARIANCE MATRIX** paragraph is used.

Notes

- The covariance matrix must be in lower triangular form as shown in the examples below.
- One can read a full covariance matrix by the commands **Full Covariance Matrix**.

Syntax

```
COVARIANCE MATRIX  
<values>
```

where <values> denotes the sample variances and covariances of the observed variables in free format. If the sample variances and covariances are provided in a fixed format, a **FORTTRAN** type X format statement should be included as the first line of the **COVARIANCE MATRIX** paragraph.

Examples

```
COVARIANCE MATRIX  
25.001  
33.257 57.251  
26.385 32.674 61.323  
39.533 38.552 44.227 72.052
```

```
COVARIANCE MATRIX  
(4F6.3)  
25.001  
33.25757.251  
26.38532.67461.323  
39.53338.55244.22772.052
```

1.14 COVARIANCE MATRIX FROM FILE command

The COVARIANCE MATRIX FROM FILE command is used to specify the name of the text file that contains the sample covariance matrix of the observed variables of the model. It is a **required** command only if the covariance matrix to be analyzed is in the form of a text file.

Notes

- The covariance matrix must be in lower triangular form as shown in the examples below.
- One can read a full covariance matrix by the command **Full Covariance Matrix from File**.

Syntax

```
COVARIANCE MATRIX FROM FILE <filename>
```

where <filename> denotes the name of the text file containing the sample covariance matrix.

Example

Suppose that the name of the text file with the sample variances and covariances is **NIH1.COV** and that it is located in the folder **Projects\NIH1** on the E drive. In this case, the corresponding COVARIANCE MATRIX FROM FILE command is given by

```
COVARIANCE MATRIX FROM FILE 'E:\Projects\NIH1\NIH1.COV'
```

1.15 END OF PROBLEM command

The END OF PROBLEM command is usually the final command of a SIMPLIS syntax file and it indicates that no more commands or paragraphs are to be processed. It is an **optional** command.

Syntax

```
END OF PROBLEM
```

1.16 ESTIMATE RESIDUALS command

If used together with the **LS <lsf filename>** command creates a new file **filename.lsf** containing all the observed variables in the model appended with all the latent variable scores and scores of all error terms, i.e. all errors on the Y-, X-, and Eta-variables, in the model.

Example (obsresex\ba1d.spl)

Industrialization-Democracy Example
Raw Data from file POLIDEMstd.LSF
Latent Variables: Dem60 Dem65 Indus
Relationships:
Y1= Dem60
Y2-Y4 = Dem60
Y5 = Dem65
Y6-Y8 = Dem65
X9 = Indus
X10-X11 = Indus
Dem60 = Indus
Dem65 = Dem60 Indus
Set Dem60 -> Y2 = Dem65 -> Y6
Set Dem60 -> Y3 = Dem65 -> Y7
Set Dem60 -> Y4 = Dem65 -> Y8
Let the errors of Y5 and Y1 be correlated
let the errors of Y6 and Y2 be correlated
Let the errors of Y7 and Y3 be correlated
Let the errors of Y8 and Y4 be correlated
LSFfile POLIDEMstd.LSF
Estimate Residuals
Path Diagram
End of Problem

1.17 FACTOR ANALYSIS paragraph

Factor Analysis with k Factors is used to perform Maximum Likelihood Factor Analysis, i.e., Exploratory Factor Analysis, with k Factors. The analysis is based on all variables in the data. If **with k Factors** is omitted, the number of factors will be determined by LISREL.

Example (nsfex\npv2.spl)

Exploratory Factor Analysis of Nine Psychological Variables
Observed Variables
'VIS PERC' CUBES LOZENGES 'PAR COMP' 'SEN COMP' WORDMEAN
ADDITION COUNTDOT 'S-C CAPS'
Correlation Matrix from File NPV.KM
Sample Size 145
Factor Analysis with 3 Factors
End of Problem

1.18 GROUP command

The GROUP command is used to specify a model for each of the groups in a multiple-group structural equation model. A GROUP command is specified for each group to be included in the multiple group analysis. If no RELATIONSHIPS or PATHS paragraph and no SET command are specified for any group after the very first group, the structural equation model for the group is assumed to be identical (including equal parameters) to that of the previous group. In other words, if you want the parameters to be different from that of the previous group for a specific group, each parameter has to be specified explicitly in the RELATIONSHIPS or PATHS paragraph or SET commands for that specific group.

Syntax

```
GROUP <string>
```

where <string> denotes the descriptive name of the group.

Examples

```
GROUP Freshmen
```

```
GROUP 1
```

1.19 LATENT VARIABLES paragraph

The LATENT VARIABLES paragraph is used to provide descriptive names to the latent variables of the model. It is a **required** command if the model includes latent variables. However, if the latent variable labels are in the form of a text file, the LATENT VARIABLES FROM FILE command instead of the LATENT VARIABLES paragraph is used.

Syntax

```
LATENT VARIABLES  
<labels>
```

where <labels> denotes the descriptive names of the latent variables of the model. These names are provided in free or abbreviated format and only the first 8 characters of each name are utilized.

Note

UNOBSERVED VARIABLES is synonymous with LATENT VARIABLES

Examples

```
LATENT VARIABLES  
JobSat OrgCom Perform
```

```
LATENT VARIABLES  
FACTOR1 - FACTOR4
```

1.20 LATENT VARIABLES FROM FILE command

If the labels of the latent variables are in the form of a text file, the LATENT VARIABLES FROM FILE command is used to specify descriptive names for the latent variables of the model. In this specific case, it is a **required** command. The latent variable labels can also be specified as part of the SIMPLIS syntax file. In this regard, the LATENT VARIABLES paragraph rather than the LATENT VARIABLES FROM FILE command is used.

Syntax

```
LATENT VARIABLES FROM FILE <filename>
```

where <filename> denotes the name of the text file containing the descriptive names of the latent variables of the model.

Example

Suppose that the name of the text file containing the latent variable labels is **SELECT.LAB** and that it is located in the folder **Projects\SELECT** on the D drive. In this case, the corresponding LATENT VARIABLES FROM FILE command is given by

```
LATENT VARIABLES FROM FILE 'D:\Projects\SELECT\SELECT.LAB'
```

1.21 LISREL OUTPUT command

The LISREL OUTPUT command is used to request the results to be printed in terms of the LISREL model used in the analysis, to specify special analyses and to request additional results. It is an **optional** command. If the results in terms of the LISREL model are not desired, the OPTIONS command may be used to specify special analyses and to request additional results.

Syntax

```
LISREL OUTPUT <options>
```

where <options> denotes a list of options for the analysis each of which either has the syntax:

<keyword> = <selection>

where <keyword> is one of AD, AL, BE, DW, EP, GA, IT, KA, LX, LY, MA, ME, ND, PH, PS, PV, RC, SI, SL, SV, TD, TE, TH, TM, TV, TX, TY or XO and <selection> denotes a number, a value or a name; or the syntax:

<option>

where <option> is one of ALL, AM, EF, FS, FT, MI, MR, NS, PC, PT, RO, RS, SC, SO, SS, WP, XI or XM. Keywords and options may be specified in any order.

Examples

LISREL OUTPUT ND = 3 SC ME = DW

LISREL OUTPUT BE = BETA.TXT GA = GAMMA.TXT PV = PV.TXT SV = SV.TXT ND = 6

All the keywords and options of the LISREL OUTPUT command are **optional**.

AD keyword

The purpose of the AD keyword is to specify the iteration number at which the admissibility of the solution will be checked and the iterations will stop if the check fails.

Syntax

AD = <number>

where <number> denotes the iteration number or OFF if the check is to be turned off.

Default

AD = 20

AL keyword

The AL keyword is used to specify the name of the text file to which the estimates of the endogenous latent variable means or the intercepts of the regression for the endogenous latent variables are to be written.

Syntax

AL = <filename>

where <filename> denotes the name of the text file to which the estimates are to be written.

ALL option

The purpose of the ALL option is to invoke the printing of all the results in the output file.

AM option

The automatic model modification procedure is invoked by specifying the AM option.

BE keyword

The purpose of the BE keyword is to specify the name of the text file for the estimate of the matrix of regression coefficients for the regression among the endogenous latent variables.

Syntax

BE = <filename>

where <filename> denotes the name of the text file for the matrix of estimates.

EF option

The EF option is used to invoke the printing of the estimated total and indirect effects in the output file.

EP keyword

The convergence criterion for the iterative algorithm is specified by using the EP keyword.

Syntax

EP = <value>

where <value> denotes the convergence criterion.

Default

EP = 0.000001

FS option

The FS option is used to request a factor scores regression analysis.

FT option

The purpose of the FT option is to request an external text file containing measures of fit based on four different χ^2 test statistic values.

GA keyword

The GA keyword is used to specify the name of the text file for the estimated regression matrix of the regression of the endogenous latent variables on the exogenous latent variables.

Syntax

GA = <filename>

where <filename> denotes the name of the text file for the matrix of estimates.

IT keyword

The purpose of the IT keyword is to specify the maximum number of iterations for the iterative algorithm, which is used to compute parameter and standard error estimates.

Syntax

IT = <number>

where <number> denotes the maximum number of iterations.

Default

IT = <5q>

where <5q> is five times the number of free parameters of the model.

KA keyword

The KA keyword is used to specify the name of the text file for the estimates of the means of the exogenous latent variables.

Syntax

KA = <filename>

where <filename> denotes the name of the text file for the estimates.

LX keyword

The estimated matrix of factor loadings for the exogenous latent variables can be written to a text file by using the LX keyword.

Syntax

LX = <filename>

where <filename> denotes the name of the text file for the matrix of estimates.

LY keyword

The purpose of the LY keyword is to specify the name of the text file for the estimated matrix of factor loadings for the endogenous latent variables.

Syntax

LY = <filename>

where <filename> denotes the name of the text file for the matrix of estimates.

MA keyword

The MA keyword is used to specify the name of the text file for the moment matrix that was analyzed.

Syntax

MA = <filename>

where <filename> denotes the name of the text file for the moment matrix that was analyzed.

ME keyword

If the maximum likelihood method is not desired, other methods to fit the LISREL model to the data can be specified by using the ME keyword.

Syntax

ME = <method>

where <method> is one of the following:

IV	instrumental variables
TS	two-stage least squares
UL	unweighted least squares
GL	generalized least squares
ML	maximum likelihood
WL	weighted least squares

Default

ME = ML

MI option

The printing of the model modification indices in the output file is invoked by specifying the MI option.

MR option

The printing of the model modification indices in the output file is invoked by specifying the MR option.

ND keyword

The purpose of the ND keyword is to specify the number of decimals for the results.

Syntax

ND = <number>

where <number> denotes the number of decimals desired.

Default

ND = 3

NS option

The NS option is used to suppress the computation of internal starting values.

PC option

The PC option is used to invoke the printing of both the estimated asymptotic covariance and correlation matrices of the parameter estimators in the output file.

PH keyword

The PH keyword is used to specify the name of the text file for the estimated covariance (correlation) matrix of the exogenous latent variables.

Syntax

PH = <filename>

where <filename> denotes the name of the text file for the matrix of estimates.

PS keyword

The purpose of the PS keyword is to specify the name of the text file for the estimated covariance matrix of the error terms for the endogenous latent variables.

Syntax

PS = <filename>

where <filename> denotes the name of the text file for the matrix of estimates.

PT option

The PT option is used to invoke the printing of the technical details of the estimation method in the output file.

PV keyword

The PV keyword is used to specify the name of the text file for the estimates of all the free parameters of the LISREL model.

Syntax

PV = <filename>

where <filename> denotes the name of the text file to which the estimates are to be written.

RC keyword

The RC keyword is used to specify the ridge constant to be used if the matrix to be analyzed is not positive definite.

Syntax

RC = <value>

where <value> denotes the ridge constant.

Default

RC = 0.001

RO option

The purpose of the RO option is to invoke the use of the ridge constant for the moment matrix to be analyzed. The RO option will be invoked automatically if the matrix is not positive definite.

RS option

The RS option is used to invoke the printing of the residuals, standardized residuals, QQ-plot, and fitted covariance (or correlation, or moment) matrix in the output file.

Note

The statement:

PRINT RESIDUALS is equivalent with the RS option.

SC option

The SC option is used to invoke the printing of the completely standardized solution in the output file.

SI keyword

The purpose of the SI keyword is to specify the name of the text file for the fitted moment matrix.

Syntax

SI = <filename>

where <filename> denotes the name of the text file for the fitted moment matrix.

SL keyword

The SL keyword is used to specify the significance level of the model automated modification procedure expressed as a percentage when the automated modification procedure is desired.

Syntax

SL = <number>

where <number> denotes the significance level expressed as a percentage.

Default

SL = 1

SO option

The SO option is used to suppress the automated checking of the scale setting for each latent variable. It is needed for very special models where scales for latent variables are defined in a different way.

SS option

The SS option is used to invoke the printing of a solution in which the latent variables are standardized in the output file.

SV keyword

The purpose of the SV keyword is to specify the name of the text file for the standard error estimates of all the free parameters of the LISREL model.

Syntax

SV = <filename>

where <filename> denotes the name of the text file to which the standard error estimates are to be written.

TD keyword

The TD keyword is used to specify the name of the text file for the estimated covariance matrix of the measurement errors of the indicators of the exogenous latent variables.

Syntax

TD = <filename>

where <filename> denotes the name of the text file for the matrix of estimates.

TE keyword

The purpose of the TE keyword is to specify the name of the text file for the estimated covariance matrix of the measurement errors of the indicators of the endogenous latent variables.

Syntax

TE = <filename>

where <filename> denotes the name of the text file for the matrix of estimates.

TH keyword

The TH keyword is used to specify the name of the text file for the estimated covariance matrix between the measurement errors of the indicators of the endogenous latent variables and those of the exogenous latent variables.

Syntax

TH = <filename>

where <filename> denotes the name of the text file for the matrix of estimates.

TM keyword

The TM keyword can be used to specify the maximum number of CPU seconds allowed for the current analysis.

Syntax

TM = <number>

where <number> denotes the maximum number of CPU seconds allowed.

Default

TM = 172800

TV keyword

The purpose of the TV keyword is to specify the name of the text file for the t values of all the free parameters of the LISREL model.

Syntax

TV = <filename>

where <filename> denotes the name of the text file to which the t values are to be written.

TX keyword

The TX keyword is used to specify the name of the text file for the estimated vector of intercepts for the indicators of the exogenous latent variables.

Syntax

TX = <filename>

where <filename> denotes the name of the text file for the vector of estimates.

TY keyword

The TY keyword is used to specify the name of the text file for the estimated vector of intercepts for the indicators of the endogenous latent variables.

Syntax

TY = <filename>

where <filename> denotes the name of the text file for the vector of estimates.

WP option

The WP option is used to specify a column width of 132 for the output file. The default column width is 80 characters.

Note

The statement:

WIDE PRINT is equivalent to the WP option.

XA option

The purpose of XA option is to suppress the computation and printing of the additional χ^2 test statistic values. Only C1 (minimum fit function χ^2 value) will be computed. Standard error estimates are not affected. C1 is still an asymptotically correct chi-square for the GLS, ML, and WLS methods but not for ULS and DWLS methods. It is only intended for those who have very large models and cannot afford (or do not want) to let the computer run for an extended period.

XI option

The XI option is used to suppress the printing of the numerous measures of fit to the output file. If the XI option is specified, only the χ^2 value, degrees of freedom and corresponding p-value are printed.

XM option

The XM option is used to suppress the computation and printing of the modification indices. When a path diagram is requested, the indices will be computed, but will not be included in the output.

XO keyword

The purpose of the XO keyword is to specify the number of repetitions for which results should be written to the output file.

Syntax

XO = <number>

where <number> denotes the number of repetitions for which results should be written to the output file.

Default

XO = <nrep>

where <nrep> is the number of repetitions specified.

1.22 LSFFILE command

This command creates a new file **filename.lsf** containing all the observed variables in the model appended with all the latent variable scores.

Syntax

LSFFILE <lsf filename>

Example (obsresex\ba1d.spl)

Industrialization-Democracy Example
Raw Data from file POLIDEMstd.LSF
Latent Variables: Dem60 Dem65 Indus
Relationships:
Y1= Dem60
Y2-Y4 = Dem60
Y5 = Dem65
Y6-Y8 = Dem65
X9 = Indus
X10-X11 = Indus

```
Dem60 = Indus
Dem65 = Dem60 Indus
Set Dem60 -> Y2 = Dem65 -> Y6
Set Dem60 -> Y3 = Dem65 -> Y7
Set Dem60 -> Y4 = Dem65 -> Y8
Let the errors of Y5 and Y1 be correlated
let the errors of Y6 and Y2 be correlated
Let the errors of Y7 and Y3 be correlated
Let the errors of Y8 and Y4 be correlated
LSFfile POLIDEMstd.LSF
! Estimate Residuals
Path Diagram
End of Problem
```

1.23 MEANS paragraph

The MEANS paragraph is used to provide the sample means of the observed variables of the model as part of the SIMPLIS syntax file. It is a **required** command only if a mean-and-covariance structure model is specified and the raw data file or DSF is not provided. Sample means can also be provided in the form of an external text file. In this case, the MEANS FROM FILE command rather than the MEANS paragraph is used.

Syntax

```
MEANS
<values>
```

where <values> denotes a list of sample means in free or fixed format. If a fixed format rather than a free format is used, a FORTRAN type format statement should be the first line of the MEANS paragraph.

Examples

```
MEANS
12.225 16.752 18.239 20.003 15.395
```

MEANS
(5F6.3)
12.22516.75218.23920.00315.395

1.24 MEANS FROM FILE command

The MEANS FROM FILE command is used to specify the name of the text file that contains the sample means of the observed variables of the model. It is a **required** command only if a mean-and-covariance structure model is specified and the raw data file or DSF is not provided. Sample means can also be provided as part of the SIMPLIS syntax file. This is accomplished by using the MEANS paragraph instead of the MEANS FROM FILE command.

Syntax

```
MEANS FROM FILE <filename>
```

where <filename> denotes the name of the text file containing the sample means.

Example

Suppose that the name of the text file with the sample means is **SELECT.MNS** and that it is located in the folder **Projects\SELECT** on the D drive. In this case, the corresponding MEANS FROM FILE command is given by

```
MEANS FROM FILE 'D:\Projects\SELECT\SELECT.MNS'
```

1.25 MISSING VALUE CODE command

If the raw data to be processed include missing values, the MISSING VALUE CODE command is used to specify the global missing value. It is a **required** command if the Full Information Maximum Likelihood (FIML) method for data with missing values is to be used and the global missing value is not specified in the LSF.

Syntax

```
MISSING VALUE CODE <value>
```

where <value> denotes the global missing value.

Example

Suppose that the missing values in a text data file are all listed as -100. The MISSING VALUE CODE command is then

1.26 MOMENT MATRIX paragraph

The MOMENT MATRIX paragraph is used to provide the sample moment matrix as a part of the SIMPLIS syntax file. If the moment matrix to be analyzed is provided as part of the SIMPLIS syntax file, it is a **required** command. If the sample moment matrix is in the form of a text file, the MOMENT MATRIX FROM FILE command rather than the MOMENT MATRIX paragraph is used.

Note

The moment matrix must be in lower triangular form..

Syntax

```
MOMENT MATRIX  
<values>
```

If the moment matrix is provided in a fixed format, a FORTRAN type format statement should be included. See Section 1.12 for an example of a format statement.

1.27 MOMENT MATRIX FROM FILE command

The MOMENT MATRIX FROM FILE command is used to specify the name of the text file that contains the sample moment matrix of the observed variables of the model. It is a **required** command only if the moment matrix to be analyzed is in the form of a text file.

Notes

The matrix must be in lower triangular form.

Syntax

```
MOMENT MATRIX FROM FILE <filename>
```

where <filename> denotes the name of the text file containing the sample moment matrix.

1.28 MULTIPLE IMPUTATION COMMAND

If the data file contains missing values with a missing value code defined in the **Isf** file or in a **Missing Value Code** command, LISREL will obtain a complete data set by Multiple Imputation by the EM method and use this complete data set to estimate the model. This can be used in

combination with Robust Estimation and/or Analyze Correlations. Cases with missing values on all variables are deleted.

Multiple Imputation with MC implies multiple imputation by the MCMC method instead.

Syntax

Multiple Imputation with <value>

where <value> denotes EM or MC.

Example

```
Efficacy: Model 2 Estimated by Robust Diagonally Weighted Least Squares
Raw Data from file EFFICACY.LSF
Multiple Imputation with MC
Latent Variables Efficacy Respons
Relationships
NOSAY COMPLEX NOCARE = Efficacy
NOCARE - INTEREST = Respons
Robust Estimation
Method of Estimation: Diagonally Weighted Least Squares
Path Diagram
End of Problem
```

1.29 OBSERVED VARIABLES paragraph

The OBSERVED VARIABLES paragraph is used to provide descriptive names to the observed variables of the model. It is a **required** command, unless a LSF or a DSF is used. If the labels of the observed variables are in the form of a text file, the OBSERVED VARIABLES FROM FILE command instead of the OBSERVED VARIABLES paragraph is used.

Syntax

```
OBSERVED VARIABLES
<labels>
```

where <labels> denotes the descriptive names of the observed variables of the model. These names are provided in free or abbreviated format and only the first 8 characters of each name are utilized.

Examples

```
OBSERVED VARIABLES
Age Gender MSCORE SSCORE ESCORE
```

OBSERVED VARIABLES
JS1 – JS6 OC1 – OC10

1.30 OBSERVED VARIABLES FROM FILE command

If the labels of the observed variables are in the form of a text file, the OBSERVED VARIABLES FROM FILE command is used to specify descriptive names for the observed variables of the model. If a DSF or a LSF is not used, it is a **required** command. The labels of the observed variables can also be specified as part of the SIMPLIS syntax file. In this regard, the OBSERVED VARIABLES paragraph rather than the OBSERVED VARIABLES FROM FILE command is used.

Syntax

OBSERVED VARIABLES FROM FILE <filename>

where <filename> denotes the name of the text file containing the descriptive names of the observed variables of the model.

Example

Suppose that the name of the text file containing the latent variable labels is **ABUSE.LAB**, which is located in the folder **Projects\ABUSE** on the C drive. In this case, the corresponding OBSERVED VARIABLES FROM FILE command is given by

OBSERVED VARIABLES FROM FILE 'C:\Projects\ABUSE\ ABUSE.LAB'

1.31 OPTIONS command

The OPTIONS command is used to specify special analyses and to request additional results and it is an **optional** command. If the results in terms of the LISREL model are preferred, the LISREL OUTPUT command should be used.

Note

The SIMPLIS Statement ADMISSIBILITY OFF is equivalent to OPTIONS AD=OFF.

Syntax

OPTIONS <options>

where <options> denotes a list of options for the analysis each of which either has the syntax:

<keyword> = <selection>

where <keyword> is one of AD, AL, BE, EP, GA, IT, KA, LX, LY, MA, ME, ND, NP, PH, PS, PV, RC, SI, SL, SV, TD, TE, TH, TM, TV, TX, TY or XO and <selection> denotes a number, a value or a name; or the syntax:

<option>

where <option> is one of ALL, AM, DW, EF, FS, FT, MI, MR, NS, PC, PT, RO, RS, SC, SO, SS, WP, XA, XI or XM.

Examples

OPTIONS ND = 3 SC ME = DW AD = OFF

1.32 PATH DIAGRAM command

The PATH DIAGRAM command is used to generate a PTH file in which the results of the analysis are summarized in the form of a path diagram. It is an **optional** command.

Syntax

PATH DIAGRAM

1.33 PATHS paragraph

The PATHS paragraph may be used to specify the regression relationships of the structural equation model to be fitted to the data. Alternatively, the RELATIONSHIPS paragraph can be used to specify these relationships. It is a **required** command only if the RELATIONSHIPS paragraph is not used.

Syntax

PATHS
<paths>

where <paths> denotes a list of regression relationships each of which has the following syntax

<x> -> <y>

where <x> denotes a list of independent (exogenous) variable labels and <y> denotes a list of dependent (endogenous) variable labels. These lists can be in free format or in abbreviated form.

Example

```
PATHS
JS -> JS1 – JS7
OC -> OC1 OC3 OC7
OC -> JS
```

1.34 PRINCIPAL COMPONENTS paragraph

Principal components with k Components is used to perform Principal Components Analysis with k components. The analysis is based on all variables in the data. If the **with k Components** part is omitted, all components will be computed.

Example (\nsfex\npv2.spl)

```
! Principal Components Analysis of Nine Psychological Variables
! file npv.km in \nsfex folder
Observed Variables
'VIS PERC' CUBES LOZENGES 'PAR COMP' 'SEN COMP' WORDMEAN
ADDITION COUNTDOT 'S-C CAPS'
Correlation Matrix from File NPV.KM
Sample Size 145
Principal Components with 4 Components
End of Problem
```

1.35 RAW DATA paragraph

The RAW DATA paragraph is used to provide the raw data to be analyzed as part of the SIMPLIS syntax file. It is a **required** command only if the raw data are provided as part of the SIMPLIS syntax file. If the raw data are in the form of a text file or a LSF, the RAW DATA FROM FILE command instead of the RAW DATA paragraph is used.

Syntax

```
RAW DATA
<values>
```

where <values> denotes the rows of the raw data matrix. These rows can be provided in free or fixed formats. However, in the case of a fixed format, the first line of the RAW DATA paragraph should be a FORTRAN format statement.

Examples

RAW DATA

1 7 5

2 1 7

5 5 5

2 2 4

3 3 1

5 6 6

7 7 7

1 1 1

1 2 1

6 6 7

RAW DATA

(2F6.3)

12.34514.417

16.24519.205

10.33411.276

15.11416.267

13.24715.589

1.36 RAW DATA FROM FILE command

The RAW DATA FROM FILE command is used to specify the name of the LSF or the text file containing the raw data. It is a **required** command only if a LSF or a text data file is to be processed. The raw data matrix can also be specified as part of the SIMPLIS syntax file. In this regard, the RAW DATA paragraph rather than the RAW DATA FROM FILE command is used.

Syntax

```
RAW DATA FROM FILE <filename>
```

where <filename> denotes the name of the text data file or the LSF.

Example

Suppose that the name of the LSF containing the raw data is **SELECT.LSF** and that it is located in the folder **Projects\SELECT** on the E drive. In this case, the corresponding RAW DATA FROM FILE command is given by

```
RAW DATA FROM FILE 'E:\Projects\SELECT\SELECT.LSF'
```

1.37 REGRESS Y ON X1, X2,... paragraph

Regress Y on <list of X-variables> is used to estimate the regression of Y on a set of X-variables.

Example

```
Observed Variables: X1-X3 Y1 Y2
Covariance Matrix
3792.439
 164.169 115.218
 554.762 33.217 119.409
 166.905 -24.385 44.721 62.252
 379.754 38.651 56.171 -16.020 71.886
Sample Size = 23
Regress Y1 on X1-X3
End of Problem
```

1.38 RELATIONSHIPS paragraph

The RELATIONSHIPS paragraph may be used to specify the regression relationships of the structural equation model. The PATH commands can also be used to specify these relationships. It is a **required** paragraph only if a PATH command is not used.

Note

EQUATIONS is synonymous with RELATIONSHIPS.

Syntax

```
RELATIONSHIPS
<relationships>
```

where <relationships> denotes a list of regression relationships each of which has the following syntax

```
<y> = <x>
```

where <x> denotes a list of independent (exogenous) variable labels and <y> denotes a list of dependent (endogenous) variable labels. These lists can be in free format or in abbreviated form.

Example

```
PATHS
JS1 - JS7 = JS
```

OC1 OC3 OC7 = OC
JS = OC

1.39 REORDER VARIABLES COMMAND

This command can be used to reorder variables so that the path diagram looks nicer.

Syntax

```
REORDER VARIABLES <list>
```

Example (lsplex\ex8a.sp1)

```
! Peer Influences on Ambition
Observed Variables from File EX8.LAB
Correlation Matrix from File EX8.COR
Standard Deviations from File EX8.STD
Reorder Variables: REPARASP REINTGCE RESOCIEC BFSOCIEC BFINTGCE BFPARASP
                  REOCCASP 'RE EDASP' 'BF EDASP' BFOCCASP
Sample Size 329
Latent Variables: Reambitn Bfambitn
Relationships
  REOCCASP = 1*Reambitn
  'RE EDASP'= Reambitn
  'BF EDASP'= Bfambitn
  BFOCCASP = 1*Bfambitn
  Reambitn = Bfambitn REPARASP - BFSOCIEC
  Bfambitn = Reambitn RESOCIEC - BFPARASP
Path Diagram
End of Problem
```

1.40 ROBUST ESTIMATION COMMAND

This causes LISREL to estimate an asymptotic covariance matrix of the matrix analyzed and use this to obtain robust estimates of standard errors and chi-squares. If not present, LISREL will use an asymptotic covariance matrix estimated under the assumption that the variables have a multivariate normal distribution.

Syntax

```
Robust Estimation
```

Example

```
Raw Data from File NPV.LSF
Latent Variables: Visual Verbal Speed
Relationships:
  'VIS PERC' - LOZENGES = Visual
  'PAR COMP' - WORDMEAN = Verbal
  ADDITION - SCCAPS = Speed
Robust Estimation
Path Diagram
End of Problem
```

1.41 SAMPLE SIZE command

The SAMPLE SIZE command is used to specify number of cases to be processed. It is a **required** command, unless a DSF or LSF is used.

Syntax

```
SAMPLE SIZE <number>
```

where <number> denotes the number of cases.

Example

```
SAMPLE SIZE 388
```

1.42 SAVE SIGMA TO FILE command

The SAVE SIGMA TO FILE command is used to save the fitted covariance matrix to a text file.

Syntax

```
Save Sigma to file <filename>
```

where <filename> denotes the name of the text file.

Example

```
SAVE SIGMA TO FILE 'Control_sigma.txt'
```

1.43 SET command

The SET command is used to specify the status and/or the value(s) of a parameter(s) of the model. It is an **optional** command.

Syntax

SET the <parameter> equal to <value>
SET the <parameter> Free
SET the <parameter1> and the <parameter2> Equal

where <parameter> is one of

Path <label1> -> <label2>
Variance of <label>
Covariance of <label1> and <label2>
Error Variance of <label>
Error Covariance of <label1> and <label2>

where <label>, <label1> and <label2> denote labels of observed or latent variables of the model and <value> denotes a real number.

Examples

SET the Path Ses ->Alien67 and the Path Ses ->Alien71 Equal
SET the Variance of Ses equal to 1.0
SET the Error Covariance of ANOMIA67 and ANOMIA71 Free

1.44 STANDARD DEVIATIONS paragraph

The STANDARD DEVIATIONS paragraph is used to provide the sample standard deviations of the observed variables of the model as part of the SIMPLIS syntax file. It is a **required** command only if the covariance matrix is to be analyzed and a CORRELATION MATRIX FROM FILE command or CORRELATION MATRIX paragraph is used. Sample standard deviations can also be provided can also be provided in the form of an external text file. In this case, the STANDARD DEVIATIONS FROM FILE command rather than the STANDARD DEVIATIONS paragraph is used.

Syntax

STANDARD DEVIATIONS
<values>

where <values> denotes a list of sample standard deviations of the observed variables of the model in free or fixed format. If a fixed format rather than a free format is used, a FORTRAN format statement should be the first line of the STANDARD DEVIATIONS paragraph.

Examples

```
STANDARD DEVIATIONS  
13.61 14.76 14.13 14.90 10.90 3.749
```

```
STANDARD DEVIATIONS  
(5F6.3)  
12.22516.75218.23920.00315.395
```

1.45 STANDARD DEVIATIONS FROM FILE command

The STANDARD DEVIATIONS FROM FILE command is used to specify the name of the text file that contains the standard deviations of the observed variables of the model. It is a **required** command only if the covariance matrix is to be analyzed and a CORRELATION MATRIX FROM FILE command or a CORRELATION MATRIX paragraph is used. Sample standard deviations can also be provided as part of the SIMPLIS syntax file. This is accomplished by using the STANDARD DEVIATIONS paragraph instead of the STANDARD DEVIATIONS FROM FILE command.

Syntax

```
STANDARD DEVIATIONS FROM FILE <filename>
```

where <filename> denotes the name of the text file containing the sample standard deviations.

Example

Suppose that the name of the text file with the sample standard deviations is **Depression.std** and that it is located in the folder **Projects\DEPRESSION** on the E drive. In this case, the corresponding STANDARD DEVIATIONS FROM FILE command is given by

```
STANDARD DEVIATIONS FROM FILE 'E:\Projects\DEPRESSION\Depression.std '
```

1.46 STRATUM command

Complex surveys are typically obtained by stratifying the target population into subpopulations (strata). The STRATUM command allows the user to specify the stratification variable. Since other types of surveys are incorporated, the STRATUM command is an optional command. The STRATUM command corresponds with the **STRATUM variable** section on the **Survey Design** dialog box (see the *LISREL Graphical User's Interface Guide*).

Syntax

```
STRATUM <label>
```

where <label> denotes the label of the stratification variable.

Example

Suppose that the target population was stratified into census regions and that the variable CENREG is the variable used to indicate the census region for each observation. In this case, the STRATUM command is given by

```
STRATUM CENREG
```

1.47 SYSTEM FILE FROM FILE command

The SYSTEM FILE FROM FILE command is used to specify the DSF to be processed. It is a **required** command only if a DSF is to be processed.

Syntax

```
SYSTEM FILE FROM FILE <filename>
```

where <filename> denotes the name of the DSF.

Example

Suppose that the DSF file, **DEPRESSION.DSF**, which is located in the folder **Projects\DEPRESSION** on the F drive, is to be processed. In this case, the corresponding SYSTEM FILE FROM FILE command is given by

```
SYSTEM FILE FROM FILE 'F:\Projects\DEPRESSION\DEPRESSION.DSF '
```

1.48 TITLE paragraph

The TITLE paragraph is used to specify a descriptive heading for the analysis. It is an **optional** command. If the TITLE paragraph is used, avoid using any words that correspond to other SIMPLIS commands or paragraphs in the string field.

Syntax

```
TITLE
```

<string>

where <string> denotes a character string.

Example

TITLE

A SIMPLIS syntax file for Example 6

1.49 WEIGHT command

Design weights are constructed for the ultimate sampling units of complex surveys. The purpose of the WEIGHT command is to allow the user to specify the design weight variable. Since surveys without design weights are permitted, the WEIGHT command is an optional command. The WEIGHT command corresponds with the **Design weight** section on the **Survey Design** dialog box (see the *LISREL Graphical User's Interface Guide*).

Syntax

WEIGHT <label>

where <label> denotes the label of the design weight variable.

Example

Suppose that the variable USUWGT is used to capture the design weight for each observation. For this example, the WEIGHT command is given by

WEIGHT USUWGT