



## PRELIS Syntax Guide

Copyright ©2020 by Scientific Software International, Inc. All rights reserved.

**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.**

## Table of Contents

<b>1 OVERVIEW</b> .....	<b>7</b>
<b>2 RULES</b> .....	<b>7</b>
<b>3 SYNTAX CONCEPTS</b> .....	<b>7</b>
<b>4 ORDER OF PRELIS COMMANDS</b> .....	<b>8</b>
4.1 TI Command (Title).....	8
4.2 SY Command (LISREL System File).....	8
4.3 DA Command (Data).....	9
4.4 LA Command (Labels) .....	12
4.5 RA Command (Raw Data).....	13
4.6 SE Command (Select subset).....	14
4.7 SC Command (Select Cases).....	14
4.8 SD Command (Select-delete) .....	15
4.9 FI Command (Fixed variables).....	16
4.10 CA Command (Censored above) .....	16
4.11 CB Command (Censored below).....	17
4.12 CE Command (Censored above and below).....	17
4.13 CO Command (Continuous variables) .....	18
4.14 OR Command (Ordinal variables) .....	18
4.15 RE Command (Recode).....	19
4.16 CL Command (Category labels) .....	19
4.17 NE Command (New variables) .....	20
4.18 LO Command (Logarithmic transformation) .....	20
4.19 PO Command (Power transformation) .....	22
4.20 WE Command (Weight variable) .....	23
4.21 MI Command (Missing values).....	23

4.22	IM Command (Imputation by matching)	24
4.23	EM Command (Expected Maximization imputation)	25
4.24	MC Command (Monte Carlo Markov Chain imputation)	25
4.25	ET Command (Equal Thresholds)	26
4.26	FT Command	26
4.27	HT Command (Homogeneity test)	27
4.28	MT Command (Estimate thresholds from marginal distributions)	27
4.29	LR Command (Logistic regression)	28
4.30	CR Command (Censored regression)	28
4.31	RG Command (Regression)	28
4.32	FA Command (Exploratory factor analysis)	29
4.33	PC Command (Principal components)	30
4.34	NS Command (Normal scores)	30
4.35	OU Command (Output)	31
<b>5</b>	<b>ALPHABETICAL LIST OF COMMANDS AND KEYWORDS</b>	<b>40</b>
5.1	AC Keyword	40
5.2	AL Keyword	40
5.3	AM Keyword	40
5.4	AP Option	41
5.5	BE Keyword	41
5.6	BM Keyword	41
5.7	BS Keyword	42
5.8	CA Command	42
5.9	CB Command	42
5.10	CE Command	43
5.11	CL Command	43
5.12	CM Keyword	44
5.13	CO Command	44
5.14	CR Command	45

5.15	DA Command.....	45
5.16	EM Command.....	45
5.17	ET Command.....	46
5.18	FA Command.....	46
5.19	FI Command .....	47
5.20	FO Option (data).....	47
5.21	FO Option (labels).....	48
5.22	FT Command.....	48
5.23	GA Keyword .....	49
5.24	HT Command.....	49
5.25	IM Command.....	49
5.26	IX Keyword.....	50
5.27	KM Keyword.....	50
5.28	LA Command.....	50
5.29	AL Keyword.....	51
5.30	BE Keyword.....	51
5.31	LO Command.....	52
5.32	LR Command.....	52
5.33	MA Keyword.....	53
5.34	MC Command.....	53
5.35	ME Keyword.....	54
5.36	MI Command.....	54
5.37	MI Keyword.....	54
5.38	ML Option.....	55
5.39	MM Keyword.....	55
5.40	MR Option .....	55
5.41	MT Command.....	56
5.42	NC Keyword.....	56
5.43	ND Keyword.....	56

5.44	NE Command.....	57
5.45	NF Keyword.....	57
5.46	NI Keyword.....	58
5.47	NO Keyword .....	58
5.48	NS Command.....	58
5.49	OM Keyword.....	59
5.50	OR Command .....	59
5.51	OU Command .....	60
5.52	PC Command.....	60
5.53	PK Option .....	60
5.54	PM Keyword .....	60
5.55	PO Command.....	61
5.56	PR Command.....	62
5.57	PV Option.....	62
5.58	RA Command.....	62
5.59	RA Keyword.....	63
5.60	RE Command.....	63
5.61	RE Option (data).....	64
5.62	RE Option (labels).....	64
5.63	RG Command .....	64
5.64	RM Keyword.....	65
5.65	RP Keyword .....	65
5.66	SA Keyword .....	65
5.67	SC Command.....	66
5.68	SD Command.....	67
5.69	SD Keyword .....	67
5.70	SE Command .....	68
5.71	SF Keyword.....	68
5.72	SM Keyword .....	68

<b>5.73</b>	<b>SR Keyword</b> .....	<b>69</b>
<b>5.74</b>	<b>SV Keyword</b> .....	<b>69</b>
<b>5.75</b>	<b>SY Command</b> .....	<b>70</b>
<b>5.76</b>	<b>TH Keyword</b> .....	<b>70</b>
<b>5.77</b>	<b>TI command</b> .....	<b>71</b>
<b>5.78</b>	<b>TM Keyword</b> .....	<b>71</b>
<b>5.79</b>	<b>TR Keyword</b> .....	<b>72</b>
<b>5.80</b>	<b>VR Keyword</b> .....	<b>72</b>
<b>5.81</b>	<b>WE Command</b> .....	<b>72</b>
<b>5.82</b>	<b>WI Keyword</b> .....	<b>73</b>
<b>5.83</b>	<b>WP Option</b> .....	<b>73</b>
<b>5.84</b>	<b>XB Option</b> .....	<b>73</b>
<b>5.85</b>	<b>XL Option</b> .....	<b>74</b>
<b>5.86</b>	<b>XM Option</b> .....	<b>74</b>
<b>5.87</b>	<b>XN Option</b> .....	<b>74</b>
<b>5.88</b>	<b>XO Keyword</b> .....	<b>74</b>
<b>5.89</b>	<b>XT Option</b> .....	<b>75</b>

# 1 Overview

- A PRELIS syntax file is a text file.
- The default extension of a PRELIS syntax file is **.PRL**.
- A PRELIS syntax file can be generated by using the **Syntax** buttons on the PRELIS dialog boxes of the LSF window.
- The contents of a PRELIS syntax file may be prepared manually by the user by using the **Syntax Only** option on **New** dialog box or by using any text editor such as Notepad or Wordpad.

# 2 Rules

- PRELIS commands, keywords and options are NOT case-sensitive.
- Only the first 8 characters of variable labels are significant and will be used by the program.
- The maximum line length is 1024 physical columns.
- Commands may be continued over several lines by adding a space followed by a C (for Continue) on the current line.
- A keyword and its specified value should appear on the same line: start a keyword on a new line if its specified value would extend past column 1024.
- Parentheses ( ) must be entered exactly as shown.
- Equal signs (“=”) are required for keywords.
- Use blanks to separate subcommand names, keywords, and options.
- An exclamation mark (!) or the slash-asterisk combination (/\*) may be used to indicate that everything that follows on this line is to be regarded as comments.
- Blank (empty) lines are accepted without the ! or /\*.
- After optional title lines, the DA command should appear first, the OU command should be last. The LA command should be placed before any other command using named variables (instead of variable numbers).
- The RA command may appear anywhere.
- Note that PRELIS processes recoding and transformation first, then selection, finally missing values. In exceptional cases, this may necessitate more than one run, each time saving the transformed data.
- Variables can be continuous or ordinal. Ordinal variables can have up to 15 categories. All variables are treated as ordinal by default, unless they have more than 15 categories. Use a CO command to declare variables as continuous.

# 3 Syntax Concepts

- <filename> denotes the complete name (including drive and folder names) of the file to be used. If the file and the syntax file are in the same folder, then the folder name (path) of the file may be omitted.
- <filelist> denotes a list of file names separated by commas.

- <varname> denotes a character string. The string is not case-sensitive. Only the first 8 characters are significant and will be used by the program. If the string includes a blank space, then it should be enclosed in single quotes, for example, 'VIS PERC'.
- <varlist> denotes a list of variable names separated by blank spaces.
- <varrange> denotes a list of sequential variable names with the following syntax: <varname1> - <varname2>
- <number> denotes a real number. If the number is an integer, the decimals and the decimal point may be omitted.
- <numlist> denotes a list of numbers separated by blank spaces.
- <format> denotes a Fortran format statement.

## 4 Order of PRELIS Commands

### 4.1 TI Command (Title)

#### Purpose

To specify a descriptive title for the analysis.

#### Status

Optional.

#### Syntax

```
TI
<lines>
```

where <lines> denote a line(s) specifying a title for the analysis.

#### Notes

- Everything before the line that has DA as the first two non-blank characters (indicating the first PRELIS command line) will be regarded as title lines.
- Do not start a title line with the letters DA, or the words Labels or Observed Variables.
- Starting each title line with an exclamation mark ("!"), indicating a comment, is recommended to avoid such conflict.

#### Example

```
TI
A model for Job Satisfaction and Organizational Commitment
```

### 4.2 SY Command (LISREL System File)

#### Purpose

To specify the LISREL System File (LSF) to be analyzed.

#### Status

Optional, unless a LSF is to be analyzed.

#### Syntax

```
SY=<filename>
```



**Notes**

- The SY command replaces the DA, LA and RA commands.
- The SY command should be the first PRELIS command.
- The folder name of the LSF may be omitted if the LSF and the PRELIS syntax file are in the same folder.

**Example**

SY=Satisfaction.LSF

## 4.3 DA Command (Data)

**Purpose**

To specify the structure of the data to be analyzed.

**Status**

Required, unless an SY command is used.

**Syntax**

DA <keywords>

where <keywords> refer to one or more of the following keywords:

NI  
NO  
ST  
CL  
WT  
TR  
MI  
RP

A description of each of these keywords are given next.

**NI keyword****Purpose**

To specify the number of variables in the data file.

**Status**

Required.

**Syntax**

NI=<number>

**NO keyword****Purpose**

To specify the number of cases or observations in the data file.

**Status**

Required, unless raw data are read in from an external file.

**Syntax**

NO=<number>

**Default**

NO=0

**ST keyword****Purpose**

To specify the column number of the stratification variable of the complex design.

**Status**

Optional.

**Syntax**

ST=<number>

**Example**

ST=6

**CL keyword****Purpose**

To specify the column number of the clustering variable of the complex design.

**Status**

Optional.

**Syntax**

CL=<number>

**Example**

CL=11

**WT keyword****Purpose**

To specify the column number of the design weight variable of the complex design.

**Status**

Optional.

**Syntax**

WT=<number>

**Example**

WT=15

## TR keyword

### Purpose

This keyword specifies the global treatment of missing data.

### Status

Optional.

### Syntax

TR=<option>

where <option> is one of:

PA  
LI

for pair-wise and list-wise deletion respectively.

### Default

TR=LI

## MI keyword

### Purpose

To specify the global numerical value(s) that represents all missing values in the data matrix.

### Status

Optional.

### Syntax

MI=<numlist>

## RP keyword

### Purpose

To specify the number of repetitions of a Monte Carlo or a Bootstrap study.

### Status

Optional, unless Monte Carlo or Bootstrap study data are processed.

### Syntax

RP=<number>

### Default

RP=1

### Note

It should be the first command after optional title lines, unless an SY command is specified.

### Example

DA NI=9 NO=325 TR=PA MI=-9.0

## 4.4 LA Command (Labels)

### Purpose

To specify labels for the observed variables.

### Status

Optional.

### Syntax

LA  
<varlist>

or

LA=<filename> <options>

where <options> is one or both of FO and RE. A description of these options is given next.

### FO option

#### Purpose

To specify the Fortran format statement for the labels in the text file.

#### Status

Optional, unless the labels are in fixed format in a text file.

#### Syntax

FO  
<format>

#### Example

FO  
(16A4)

### RE option

#### Purpose

To specify the rewinding of the file to the first label.

#### Status

Optional.

#### Syntax

RE

#### Default

No rewind.

**Default**

LA  
VAR1 VAR2 . . . VAR<n>

where <n> denotes the number of observed variables specified in the DA command.

**Examples**

LA  
Age Gender Reading Spelling Math Science  
LA=variables.txt

## 4.5 RA Command (Raw Data)

**Purpose**

To specify the name of the text file with the raw data to be analyzed.

**Status**

Optional, unless the raw data to be analyzed is listed in a text data file.

**Syntax**

RA=<filelist> <options>

or

RA <options>  
<matrix>

<options> is one or both of FO and RE. A description of these options is given next.

**FO option****Purpose**

To specify the Fortran format statement for the raw data in the text data file.

**Status**

Optional, unless the raw data to be analyzed are in fixed format in a text file.

**Syntax**

FO  
<format>

**Example**

FO  
(19F6.3,12I4)

**RE option****Purpose**

To specify the rewinding of the file to the first data entry.

**Status**  
Optional.

**Syntax**  
RE

**Default**  
No rewind.

and <matrix> denotes the raw data matrix.

**Example**  
RA=TurnOver.DAT

**Note**  
The folder name of the data file may be omitted if the data file and the PRELIS syntax file are in the same folder.

## 4.6 SE Command (Select subset)

**Purpose**  
To select any subset of variables in any order for the analysis.

**Status**  
Optional.

**Syntax**  
SE <numlist>

or

SE <namelist>

**Examples**  
SE 3 4 8 1 5 18  
SE Age Gender Math Science

## 4.7 SC Command (Select Cases)

**Purpose**  
To specify the selection of specific cases for the analysis.

**Status**  
Optional.

**Syntax**  
SC <varlist> <conditions>

where <conditions> is a list of conditions each with the following syntax:

<operator> <number>

where <operator> is one of: =, <, >, or SC CASE=<condition>

where <condition> is one of:

ODD  
EVEN  
< <number>  
> <number>

**Note**  
PRELIS will select all cases which satisfy all the <conditions> on all the variables in the <varlist>.

**Examples**  
SC CASE<100  
SC 2 7-11 = 2  
SC 2, 7-11 >1 < 4

## 4.8 SD Command (Select-delete)

**Purpose**  
To specify the selection of specific cases for the analysis as such that the variables used to specify the selection criteria are deleted from the data to be analyzed.

**Status**  
Optional.

**Syntax**  
SD <varlist> <conditions>

where <conditions> is a list of conditions each with the following syntax:

<operator> <number>

where <operator> is one of: =, <, >

- Notes**
- PRELIS will select all cases which satisfy all the <conditions> on all the variables in the <varlist>.
  - The variable in the <varlist> are deleted after the selection of the cases. For example, if GENDER has the values 0 and 1 SD GENDER = 1 will select all the cases with GENDER=1 and delete the variable GENDER afterwards (obviously the variable GENDER is not very useful after the selection of cases).
  - One can use an SD command without <conditions> to delete the variables in the <varlist>. For example, SD X2 Y2 will delete the variables X2 Y2. Whenever convenient, this can be used to exclude variables from analysis as an alternative to use an SE command to list the variables to be included in the analysis.

**Examples**

SD CASE<100  
SD 2 7-11 = 2  
SD 2, 7-11 >1 < 4

## 4.9 FI Command (Fixed variables)

**Purpose**

To specify X variables (fixed variables).

**Status**

Optional.

**Syntax**

FI <varlist>

or

FI <numlist>

**Notes**

- PRELIS assumes by default that all variables are Y variables.
- The X variables can be fixed or random.
- If the X variables are random, their joint distribution is unspecified and assumed not to contain any parameters of interest.
- The X variables can be dummy-coded categorical variables or measured variables on an interval scale assumed not to contain any measurement error.
- Most of the analysis that is done with PRELIS is concerned with the conditional distribution of Y for given X, but PRELIS will also estimate the unconditional joint covariance matrix of Y and X and its asymptotic covariance matrix. These can be used with WLS in LISREL in an analysis with fixed X.

**Examples**

FI Age Gender  
FI 7 12 23

## 4.10 CA Command (Censored above)

**Purpose**

To declare variables as censored above.

**Status**

Optional.

**Syntax**

CA <varlist>

or



CA <numlist>

**Note**

CA ALL specifies all the selected variables to be treated as censored above.

**Examples**

CA Income Size

CA 3 19

## 4.11 CB Command (Censored below)

**Purpose**

To declare variables as censored below.

**Status**

Optional.

**Syntax**

CB <varlist>

or

CB <numlist>

**Note**

CB ALL specifies all the selected variables to be treated as censored below.

**Examples**

CB Income Size

CB 7 12 18

## 4.12 CE Command (Censored above and below)

**Purpose**

To declare variables as censored above and below.

**Status**

Optional.

**Syntax**

CE <varlist>

or

CE <numlist>

**Note**

CE ALL specifies all the selected variables to be treated as censored above and below.

**Examples**

CE Income Size  
CE 7 12 18

## 4.13 CO Command (Continuous variables)

**Purpose**

To declare variables as continuous.

**Status**

Optional.

**Syntax**

CO <varlist>

or

CO <numlist>

**Note**

CO ALL specifies all the selected variables to be treated as continuous.

**Examples**

CO Income Age  
CO 7 12 18

## 4.14 OR Command (Ordinal variables)

**Purpose**

To declare variables as ordinal.

**Status**

Optional.

**Syntax**

OR <varlist>

or

OR <numlist>

**Note**

OR ALL specifies all the selected variables to be treated as ordinal.

**Examples**

OR Gender Count Attitude  
OR 7 12 18

## 4.15 RE Command (Recode)

### Purpose

To recode variables.

### Status

Optional.

### Syntax

```
RE <varlist> OLD=<oldvalues> NEW=<newvalues>
```

or

```
RE <numlist> OLD=<oldvalues> NEW=<newvalues>
```

where <oldvalues> denotes a list of the original variable values (separated by commas) of the observed variables to be recoded and <newvalues> denotes a list of the new variable values (separated by commas) of the observed variables to be recoded.

### Note

If ALL is specified for <varlist> the recoding will be applied to all the selected variables.

### Examples

```
RE NOSAY - INTEREST OLD=1,2,3,4 NEW=4,3,2,1
```

```
RE NOSAY - INTEREST OLD=1-2,3-4 NEW=1,0
```

```
RE INCOME OLD=50-80,81-150,151-250,251-350,351-500 NEW=1,2,3,4,5
```

## 4.16 CL Command (Category labels)

### Purpose

To specify labels for the categories of ordinal variables.

### Status

Optional.

### Syntax

```
CL <varlist> <speclist>
```

or

```
CL <numlist> <speclist>
```

where each entry of <speclist> has the following syntax

```
<number>=<label>
```

where <number> denotes an actual value of the observed variable and <label> denotes a string of length 4 or less.

**Notes**

- Each CL command contains a <varlist> listing variables with the same numerical values.
- Note that one must know which numerical values are present in the data.
- If some of the variables are recoded, the category labels refer to the recoded value.

**Example**

CL Group 1=Yes 2=No 3=Miss

## 4.17 NE Command (New variables)

**Purpose**

To specify new variables.

**Status**

Optional.

**Syntax**

NE <varname>=<function>

where <function> is a function of the existing variables, NRAND, URAND or CRAND<n> where

<n> denotes a positive integer greater than zero,

NRAND refers to a standard normal random variable,

URAND refers to a Uniform (0,1) random variable and

CRAND<n> refers to a Chi-square random variable with <n> degrees of freedom.

**Notes**

- Use an asterisk (\*) for multiplication.
- Use a double asterisk (\*\*) or caret (^) for exponentiation.
- Parentheses are not permitted, but new variables can be a function of other new variables already defined.
- Division is not permitted but exponents may be negative.

**Examples**

NE var5=2.5\*var1+var2-var3

NE var8=var1+var\*var3-var2\*\*2

NE var8=var8\*\*2

## 4.18 LO Command (Logarithmic transformation)

**Purpose**

To specify variables to be transformed with a logarithmic transformation before the requested moment matrix is computed.

**Status**

Optional.

**Syntax**

LO <varlist> < keywords>

or

LO <numlist> < keywords>

< keywords> is one or both of AL and BE. A description of these keywords follows.

**AL keyword****Purpose**

To specify the alpha value for the logarithmic transformation.

**Status**

Optional.

**Syntax**

AL=<number>

**Default**

AL=0

**BE keyword****Purpose**

To specify the beta value for the logarithmic transformation.

**Status**

Optional.

**Syntax**

BE=<number>

**Default**

BE=1

**Notes**

- The transformation is defined as:  $y = \log(\alpha + \beta \cdot x)$ , where  $x$  is the untransformed variable and  $y$  is the transformed variable.
- The transformation can be used to approximate normal distribution characteristics of the variables.
- The LO command is intended for continuous variables.
- Some care must be exercised with this command, because there may be values of alpha and beta for which the transformation is not defined for all values of  $x$  in the data. For example,  $(\alpha + \beta \cdot x)$  must be positive for all values of  $x$  in the data. Otherwise, PRELIS aborts with a fatal error message.

**Example**

LO AGE AL=0.5 BE=1.5

## 4.19 PO Command (Power transformation)

### Purpose

To specify variables to be transformed with a power transformation before the requested moment matrix is computed.

### Status

Optional.

### Syntax

PO <varlist> < keywords>

or

PO <numlist> < keywords>

where <keywords> is one or both of the following: AL, BE, GA. A description of these keywords follows.

### AL keyword

#### Purpose

To specify the alpha value for the power transformation.

#### Status

Optional.

#### Syntax

AL=<number>

#### Default

AL=0

### BE keyword

#### Purpose

To specify the beta value for the power transformation.

#### Status

Optional.

#### Syntax

BE=<number>

#### Default

BE=1

### GA keyword

#### Purpose

To specify the gamma value for the power transformation.

**Status**

Optional.

**Syntax**

GA=<number>

**Default**

GA=1

**Notes**

- The transformation is defined as:  $y=(\alpha+\beta*x)**\gamma$ , where x is the untransformed variable and y is the transformed variable.
- The transformation can be used to approximate normal distribution characteristics of the variables.
- The PO command is intended for continuous variables.
- Some care must be exercised with this command, because there may be values of alpha, beta, and gamma for which the transformation is not defined for all values of x in the data. For example, when GA=0.5,  $(\alpha+\beta*x)$  must be non-negative for all observed values of x in the data. Otherwise, PRELIS aborts with a fatal error message.

**Example**

PO AGE AL=0.5 BE=1.5 GA=2

## 4.20 WE Command (Weight variable)

**Purpose**

To specify one variable as a weight variable.

**Status**

Optional.

**Syntax**

WE <varname>

**Example**

WE USUWT

## 4.21 MI Command (Missing values)

**Purpose**

To specify missing values for a set of variables.

**Status**

Optional.

**Syntax**

MI <numlist><varlist>

or

MI <numlist><numlist>

**Examples**

MI -9.0, -8.0 3 4 8 1 5 18

MI -8888 Age Gender Math Science

## 4.22 IM Command (Imputation by matching)

**Purpose**

To specify the imputation of missing values of observed variables by means of imputation by matching.

**Status**

Optional.

**Syntax**

IM (<numlist>) (<numlist>) <keyword><options>

where <keyword> is VR and <options> is one or more of XN and XL. A description of the keyword and options follows.

### VR keyword

**Purpose**

When there are several matching cases, VR (variance ratio) specifies the upper limit for imputation.

**Status**

Optional.

**Syntax**

VR=<number>

where <number> denotes a real number between zero and one.

**Default**

VR=.5

### XN option

**Purpose**

To suppress the listing of the unsuccessful imputations in the output file.

**Status**

Optional.

**Syntax**

XN

### XL option

**Purpose**

To suppress the listing of the imputations (successful or not) in the output file.



**Status**  
Optional.

**Syntax**  
XL

## 4.23 EM Command (Expected Maximization imputation)

**Purpose**  
To invoke the Expectation Maximumization (EM) algorithm for multiple imputation of missing values.

**Status**  
Optional.

**Syntax**  
EM CC=<number> IT =<number> TC=<treatment>

where <treatment> pertains to the treatment of cases with all values missing and should have one of the following values:

- 0: replace with means (default)
- 1: keep as missing
- 2: delete cases

**Example**  
EM CC=0.00001 IT=50 TC=2

## 4.24 MC Command (Monte Carlo Markov Chain imputation)

**Purpose**  
To invoke the Monte Carlo Markov Chain (MCMC) procedure for multiple imputation of missing values.

**Status**  
Optional.

**Syntax**  
MC CC=<number> IT =<number> TC=<treatment>

where <treatment> pertains to the treatment of cases with all values missing and should have one of the following values:

- 0: replace with means (default)
- 1: keep as missing
- 2: delete cases

**Example**

MC CC=0.00001 IT=50 TC=2

## 4.25 ET Command (Equal Thresholds)

**Purpose**

To specify the computation of equal threshold estimates for a set of ordinal variables.

**Status**

Optional.

**Syntax**

ET <varlist>

or

ET <numlist>

**Example**

FT Item2 Item4 Item6 Item8

## 4.26 FT Command

**Purpose**

To specify the name of the text file with the values of the fixed thresholds for the ordinal variables.

**Status**

Optional.

**Syntax**

FT=<filename> <numlist>  
<commands>

or

FT=<filename> <varlist>  
<commands>

where <commands> are FT commands for each line of the text file after the first line with the following syntax

FT <varlist>

or

FT <numlist>

**Example**

```
FT=THRESH X2 X4 X5  
FT X1 X3
```

## 4.27 HT Command (Homogeneity test)

**Purpose**

To specify a test for the homogeneity for each pair of a set of ordinal variables.

**Status**

Optional.

**Syntax**

```
HT <varlist>
```

or

```
HT <numlist>
```

**Example**

```
HT Item2 Item4 Item6 Item8
```

## 4.28 MT Command (Estimate thresholds from marginal distributions)

**Purpose**

To specify the estimation of the thresholds from the marginal distributions of a set of ordinal variables.

**Status**

Optional.

**Syntax**

```
MT <varlist>
```

or

```
MT <numlist>
```

**Notes**

- MT ALL specifies the estimation of the thresholds from the marginal distributions of all the selected ordinal variables.
- The estimated thresholds are held fixed for the subsequent estimation of the regression coefficients in multivariate multinomial probit analysis.
- By default (no MT command), threshold and regression coefficients are estimated jointly.
- As a third alternative, the user may specify fixed thresholds for variables in the probit regressions with the FT command.

**Example**

```
MT Item1 Item12 Item15
```

## 4.29 LR Command (Logistic regression)

### Purpose

To specify a logistic regression analysis.

### Status

Optional.

### Syntax

LR <varlist> ON <varlist>

or

LR <numlist> ON <numlist>

### Example

LR Y1 Y2 on X1-X10

## 4.30 CR Command (Censored regression)

### Purpose

To specify a censored regression analysis.

### Status

Optional.

### Syntax

CR <varlist> ON <varlist>

or

CR <numlist> ON <numlist>

### Example

CR Y1 Y2 on X1-X10

## 4.31 RG Command (Regression)

### Purpose

To specify a univariate or a multivariate multiple linear regression analysis or a two stage least squares regression with instrumental variables.

### Status

Optional.

**Syntax**

RG <varlist> ON <varlist> [WITH <varlist>] [RES=<varname>]

or

RG <numlist> ON <numlist> [WITH <numlist>] [RES=<varname>]

**Examples**

```
RG Y1 ON Y2 X1 WITH X1 X2 X3
RG Y1 ON Y2 X2 X3 WITH X1 X2 X3 RES=Y1RES
RG 2 ON 1 4 7 with 3 5 6 8 9
RG 3 on 1 4 7 with 2 5 6 8 9
```

## 4.32 FA Command (Exploratory factor analysis)

**Purpose**

To specify an exploratory factor analysis.

**Status**

Optional, unless an exploratory factor analysis is desired.

**Syntax**

FA <keyword> <method>

where <keyword> is NF and <method> is ML (for Maximum Likelihood) or MR (for MINRES). A description of the NF keyword is given below.

**NF keyword****Purpose**

To specify the number of factors for an exploratory factor analysis.

**Status**

Optional, unless the number of factors is known.

**Syntax**

NF=<number>

where <number> denotes a positive integer greater than zero.

**Note**

The resulting output will give TSLs, unrotated, promax, and varimax solutions.

**Example**

```
FA NF=3
```

## 4.33 PC Command (Principal components)

### Purpose

To specify a principal component analysis.

### Status

Optional, unless a principal component analysis is desired.

### Syntax

PC <keyword>

where <keyword> is NC.

### NC keyword

### Purpose

To specify the number of principal components for a principal component analysis.

### Status

Optional, unless the number of components is known.

### Syntax

NC=<number>

where <number> denotes a positive integer greater than zero.

### Example

PC NC=4

## 4.34 NS Command (Normal scores)

### Purpose

To specify the computation of normal scores.

### Status

Optional.

### Syntax

NS <varlist>

or

NS <numlist>

### Example

NS Y12-Y35

### Notes

- NS ALL specifies the computation of normal scores for all the selected variables.

- The variables specified in <varlist> will be normalized and a resulting summary (covariance or correlation) matrix will be based on those normal scores.
- Normalizing variables is only recommended for continuous variables.
- The normal scores for each case in the data may be saved with a "RA=<filename>" specification on the PRELIS OU command.

## 4.35 OU Command (Output)

### Purpose

To specify the matrix to be analyzed and the results to be produced.

### Status

Required.

### Syntax

OU <keywords> <options>

where <keywords> is one or more of the following: MA, AC, BM, CM, KM, PM, MM, AM, OM, RA, RM, SA, ME, SD, SM, SR, SV, TH, TM, XO and <options> is one or more of XB, XT, XM, WP. Descriptions of the the keywords and options are provided below.

## MA

### Purpose

To specify the moment matrix to be analyzed.

### Status

Optional.

### Syntax

MA=<matrix>

where <matrix> is one of the following

AM	augmented moment matrix
CM	covariance matrix
KM	correlation matrix
MM	matrix of moments about zero
OM	matrix of correlations based on optimal scores
PM	correlation matrix
RM	Spearman rank correlations
TM	Kendall's tau-c correlations

**Default**

None

**AC keyword****Purpose**

To specify the name of the binary file for the estimated asymptotic covariance matrix of the non-duplicated elements of the moment matrix.

**Status**

Optional.

**Syntax**

AC=<filename>

**Example**

AC=TurnOver.ACM

**Note**

The folder name of the binary file may be omitted if the binary file and the PRELIS syntax file are in the same folder.

**BM****Purpose**

To specify the name of the text file for the moment matrices for each bootstrap sample.

**Status**

Optional.

**Syntax**

BM=<filename>

**Example**

BM=TurnOver.BSM

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**CM keyword****Purpose**

To specify the name of the text file for the sample covariance matrix.

**Status**

Optional.

**Syntax**

CM=<filename>



**Example**

CM=TurnOver.COV

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**KM keyword****Purpose**

To specify the name of the text file for the correlation matrix.

**Status**

Optional.

**Syntax**

KM=<filename>

**Example**

KM=TurnOver.COR

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**PM keyword****Purpose**

To specify the name of the text file for the correlation matrix.

**Status**

Optional.

**Syntax**

PM=<filename>

**Example**

PM=TurnOver.PCM

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**MM keyword****Purpose**

To specify the name of the text file for the sample moments about zero.

**Status**

Optional.

**Syntax**

MM=<filename>

**Example**

MM=TurnOver.MM

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**AM keyword****Purpose**

To specify the name of the text file for the augmented moment matrix.

**Status**

Optional.

**Syntax**

AM=<filename>

**Example**

AM=TurnOver.AM

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**OM keyword****Purpose**

To specify the name of the text file for the correlation matrix based on optimal scores.

**Status**

Optional.

**Syntax**

OM=<filename>

**Example**

OM=TurnOver.OSC

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**RA keyword****Purpose**

To specify the name of the text file or LSF for the transformed raw data matrix.

**Status**

Optional.

**Syntax**

RA=<filename>

**Example**

RA=TurnOver.LSF

**Notes**

- The folder name of the text file or the LSF may be omitted if the text file or the LSF and the PRELIS syntax file are in the same folder.
- The extension “.LSF” should be used to produce a LSF.

**RM keyword****Purpose**

To specify the name of the text file for the Spearman rank correlation matrix.

**Status**

Optional.

**Syntax**

RM=<filename>

**Example**

RM=TurnOver.SRC

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**SA keyword****Purpose**

To specify the name of the binary file for the estimated asymptotic covariance matrix of the non-duplicated elements of the moment matrix.

**Status**

Optional.

**Syntax**

SA=<filename>

**Example**

SA=TurnOver.ACM

**Note**

The folder name of the binary file may be omitted if the binary file and the PRELIS syntax file are in the same folder.

**ME keyword****Purpose**

To specify the name of the text file for the means for each bootstrap sample.

**Status**

Optional.

**Syntax**

ME=<filename>

**Example**

ME=TurnOver.BME

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**SD keyword****Purpose**

To specify the name of the text file for the standard deviations for each bootstrap sample.

**Status**

Optional.

**Syntax**

SD=<filename>

**Example**

SD=TurnOver.BSD

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**SM keyword****Purpose**

To specify the name of the text file for the moment matrix to be analyzed.

**Status**

Optional.

**Syntax**

SM=<filename>

**Example**

SM=TurnOver.COV

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

**SR keyword****Purpose**

To specify the name of the text file or LSF for the transformed raw data matrix.

**Status**

Optional.

**Syntax**

SR=<filename>

**Example**

SR=TurnOver.LSF

**Notes**

- The folder name of the text file or the LSF may be omitted if the text file or the LSF and the PRELIS syntax file are in the same folder.
- The extension “.LSF” should be used to produce a LSF.

**SV keyword****Purpose**

To specify the name of the binary file for the estimated asymptotic variances of the non-duplicated elements of the moment matrix.

**Status**

Optional.

**Syntax**

SV=<filename>

**Example**

SV=TurnOver.AVA

**Note**

The folder name of the binary file may be omitted if the binary file and the PRELIS syntax file are in the same folder.

**TH keyword****Purpose**

To specify the name of the text file for the common threshold estimates of the ordinal variables.

**Status**

Optional.

**Syntax**

TH=<filename>

**Example**

TH=TurnOver.THR

**Notes**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## TM keyword

### Purpose

To specify the name of the text file for the Kendall's tau-c correlation matrix.

### Status

Optional.

### Syntax

TM=<filename>

### Example

TM=TurnOver.SRC

### Note

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## XO keyword

### Purpose

To specify the number of repetitions of Monte Carlo or Bootstrap data for which results should be written to the output file.

### Status

Optional

### Syntax

XO=<number>

where <number> denotes a positive integer.

### Example

XO=5

and <options> is one or more of the following: XB, XT, XM or WP. A description of these options follows.

## XB option

### Purpose

To suppress the printing of the bivariate frequency tables in the output file.

### Status

Optional.

### Syntax

XB

### Note

Bivariate tables and test statistics are included in the standard output when MA=PM has been specified. These tables may contain important information, and most users will want to inspect them. However, when

the number of variables becomes large, bivariate frequency tables and test statistics will create a very large output file.

### **XT option**

#### **Purpose**

To suppress the printing of the test statistic values for bivariate normality in the output file.

#### **Status**

Optional.

#### **Syntax**

XT

#### **Note**

Bivariate tables and test statistics are included in the standard output when MA=PM has been specified. These tables may contain important information, and most users will want to inspect them. However, when the number of variables becomes large, bivariate frequency tables and test statistics will create a very large output file.

### **XM option**

#### **Purpose**

To suppress the performance of tests of multivariate normality.

#### **Status**

Optional.

#### **Syntax**

XM

### **WP option**

#### **Purpose**

To specify a column width of 132 for the output file.

#### **Status**

Optional.

#### **Syntax**

WP

#### **Note**

The OU command should be the final command of a PRELIS syntax file.

#### **Example**

```
OU MA=PM SM=USA.PCM AC=USA.ACM
```

## 5 Alphabetical list of commands and keywords

### 5.1 AC Keyword

**Purpose**

To specify the name of the binary file for the estimated asymptotic covariance matrix of the non-duplicated elements of the moment matrix.

**Status**

Optional.

**Syntax**

AC=<name>

where <name> denotes the complete name (including drive and folder names) of the binary file for the estimated asymptotic covariance matrix.

**Example**

AC=TurnOver.ACM

**Note**

The folder name of the binary file may be omitted if the binary file and the PRELIS syntax file are in the same folder.

### 5.2 AL Keyword

**Purpose**

To specify the alpha value for the power transformation.

**Status**

Optional.

**Syntax**

AL=<value>

where <value> denotes a real number.

**Default**

AL=0

### 5.3 AM Keyword

**Purpose**

To specify the name of the text file for the augmented moment matrix.

**Status**

Optional.

**Syntax**

AM=<name>



where <name> denotes the complete name (including drive and folder names) of the text file for the augmented moment matrix.

**Example**

AM=TurnOver.AM

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.4 AP Option

**Purpose**

To specify the alternative parameterization for ordinal variables.

**Status**

Optional.

**Syntax**

AP

## 5.5 BE Keyword

**Purpose**

To specify the beta value for the power transformation.

**Status**

Optional.

**Syntax**

BE=<value>

where <value> denotes a real number.

**Default**

BE=1

## 5.6 BM Keyword

**Purpose**

To specify the name of the text file for the moment matrices for each bootstrap sample.

**Status**

Optional.

**Syntax**

BM=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the moment matrices for each bootstrap sample.

**Example**

BM=TurnOver.BSM

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.7 BS Keyword

**Purpose**

To specify the number of bootstrap samples to be generated.

**Status**

Optional.

**Syntax**

BS=<number>

where <number> denotes a positive integer greater than zero.

**Example**

BS=100

## 5.8 CA Command

**Purpose**

To declare variables as censored above.

**Status**

Optional.

**Syntax**

CA <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be treated as censored above.

**Examples**

CA Income Size  
CA 3 19

**Note**

CA ALL specifies all the selected variables to be treated as censored above.

## 5.9 CB Command

**Purpose**

To declare variables as censored below.

**Status**

Optional.

**Syntax**

CB <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be treated as censored below.

**Examples**

CB Income Size  
CB 7 12 18

**Note**

CB ALL specifies all the selected variables to be treated as censored below.

## 5.10 CE Command

**Purpose**

To declare variables as censored above and below.

**Status**

Optional.

**Syntax**

CE <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be treated as censored below.

**Examples**

CE Income Size  
CE 7 12 18

**Note**

CE ALL specifies all the selected variables to be treated as censored above and below.

## 5.11 CL Command

**Purpose**

To specify labels for the categories of ordinal variables.

**Status**

Optional.

**Syntax**

CL <list> <label list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables of which the categories are to be labeled and <label list> denotes a list of label specifications for the different values of the observed variables to be category-labeled. Each entry of <label list> has the following syntax

<value>=<label>

where <value> denotes an actual value of the observed variable and <label> denotes a string of length 4 or less.

#### Notes

- Each CL command contains a <list> listing variables with the same numerical values.
- Note that one must know which numerical values are present in the data.
- If some of the variables are recoded, the category labels refer to the recoded value.

## 5.12 CM Keyword

#### Purpose

To specify the name of the text file for the sample covariance matrix.

#### Status

Optional.

#### Syntax

CM=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the sample covariance matrix.

#### Example

CM=TurnOver.COV

#### Note

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.13 CO Command

#### Purpose

To declare variables as continuous.

#### Status

Optional.

#### Syntax

CO <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be treated as continuous.

#### Examples

CO Income Age  
CO 7 12 18

#### Note

CO ALL specifies all the selected variables to be treated as continuous.

## 5.14 CR Command

### Purpose

To specify a censored regression analysis.

### Status

Optional.

### Syntax

CR <y> ON <x>

where <y> denotes the list of labels for the dependent variables and <x> denotes the list of labels for the independent variables (covariates).

### Example

CR Y1 Y2 on X1-X10

## 5.15 DA Command

### Purpose

To specify the structure of the data to be analyzed.

### Status

Required.

### Syntax

DA <keywords>

where <keywords> refers to one or more of the following keywords.

NI  
NO  
TR  
MI  
RP

### Example

DA NI=9 NO=325 TR=PA MI=-9.0

### Note

It should be the first command after optional title lines, unless an SY command is specified.

## 5.16 EM Command

### Purpose

To invoke the Expectation Maximum (EM) algorithm for multiple imputation of missing values.

### Status

Optional.

**Syntax**

EM CC=<critierion> IT =<iterations> TC=<treatment>

where

<critierion> is the convergence criterion (default CC=0.00001),  
<iterations> denotes the number of iterations (default IT=200) and  
<treatment> pertains to the treatment of cases with all values missing and should have one of the following values:

0:	replace with means (default)
1:	keep as missing
2:	delete cases

**Example**

EM CC=0.00001 IT=50 TC=2

## 5.17 ET Command

**Purpose**

To specify the computation of equal threshold estimates for a set of ordinal variables.

**Status**

Optional.

**Syntax**

ET <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the ordinal variables to be used.

**Example**

FT Item2 Item4 Item6 Item8

## 5.18 FA Command

**Purpose**

To specify an exploratory factor analysis.

**Status**

Optional, unless an exploratory factor analysis is desired.

**Syntax**

FA <keyword> <option>

where <keyword> is NF and <option> is only one of the following

ML  
MR

**Example**

FA NF=3

**Notes**

The resulting output will give TSLS, unrotated, promax, and varimax solutions.

## 5.19 FI Command

**Purpose**

To specify X variables (fixed variables).

**Status**

Optional.

**Syntax**

FI <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be treated as X variables.

**Examples**

FI Age Gender

FI 7 12 23

**Notes**

- PRELIS assumes by default that all variables are Y variables.
- The X variables can be fixed or random.
- If the X variables are random, their joint distribution is unspecified and assumed not to contain any parameters of interest.
- The x-variables can be dummy-coded categorical variables or measured variables on an interval scale assumed not to contain any measurement error.
- Most of the analysis that is done with PRELIS is concerned with the conditional distribution of Y for given X, but PRELIS will also estimate the unconditional joint covariance matrix of Y and X and its asymptotic covariance matrix. These can be used with WLS in LISREL in an analysis with fixed X.

## 5.20 FO Option (data)

**Purpose**

To specify the Fortran format statement for the raw data in the text data file.

**Status**

Optional, unless the raw data to be analyzed are in fixed format in a text file.

**Syntax**

FO

<format>

where <format> denotes a Fortran format statement.

**Example**

```
FO  
(19F6.3,12I4)
```

## 5.21 FO Option (labels)

**Purpose**

To specify the Fortran format statement for the labels in the text file.

**Status**

Optional, unless the labels are in fixed format in a text file.

**Syntax**

```
FO  
<format>
```

where <format> denotes a Fortran format statement.

**Example**

```
FO  
(16A4)
```

## 5.22 FT Command

**Purpose**

To specify the name of the text file with the values of the fixed thresholds for the ordinal variables.

**Status**

Optional.

**Syntax**

```
FT=<name> <list>  
<commands>
```

where <name> denotes the complete name (including drive and folder names) of the text file that contains the fixed threshold values, <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables with thresholds on line 1 of the text file and <commands> are FT commands for each line of the text file after the first line with the following syntax

```
FT <list>
```

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables with thresholds on the specific line of the text file.

**Example**

```
FT=THRESH X2 X4 X5  
FT X1 X3
```



## 5.23 GA Keyword

### Purpose

To specify the gamma value for the power transformation.

### Status

Optional.

### Syntax

GA=<value>

where <value> denotes a real number.

### Default

GA=1

## 5.24 HT Command

### Purpose

To specify a test for the homogeneity for each pair of a set of ordinal variables.

### Status

Optional.

### Syntax

HT <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the ordinal variables to be used.

### Example

HT Item2 Item4 Item6 Item8

## 5.25 IM Command

### Purpose

To specify the imputation of missing values of ordinal variables by means of imputation by matching.

### Status

Optional.

### Syntax

IM (<impute>) (<match>) <keyword> <options>

where <impute> denotes a list of labels or integer positions (separated by blank spaces) of observed variables to be imputed, <match> denotes a list of labels or integer positions (separated by blank spaces) of observed variables to be used as matching variables, <keyword> is VR and <options> is one or more of the following

XN

XL

## 5.26 IX Keyword

### Purpose

To specify the integer starting value for the random number generator.

### Status

Optional.

### Syntax

SF=<number>

where <number> denotes a positive integer greater than zero.

### Example

IX=8956

## 5.27 KM Keyword

### Purpose

To specify the name of the text file for the correlation matrix.

### Status

Optional.

### Syntax

KM=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the correlation matrix.

### Example

KM=TurnOver.COR

### Note

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.28 LA Command

### Purpose

To specify labels for the observed variables.

### Status

Optional.

### Syntax

LA  
<labels>

or

LA=<name> <options>

where <name> denotes the complete name (including drive and folder names) of the text file that contains the labels in free format and <options> is one or both of

FO  
RE

**Default**

LA  
VAR1 VAR2 . . . VAR<n>

where <n> denotes the number of observed variables specified in the DA command.

**Examples**

LA  
Age Gender Reading Spelling Math Science  
LA=variables.txt

**Notes**

- Maximum length for each label is 8 characters.
- The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.29 AL Keyword

**Purpose**

To specify the alpha value for the logarithmic transformation.

**Status**

Optional.

**Syntax**

AL=<value>

where <value> denotes a real number.

**Default**

AL=0

## 5.30 BE Keyword

**Purpose**

To specify the beta value for the logarithmic transformation.

**Status**

Optional.

**Syntax**

BE=<value>

where <value> denotes a real number.

**Default**

BE=1

## 5.31 LO Command

**Purpose**

To specify variables to be transformed with a logarithmic transformation before the requested moment matrix is computed.

**Status**

Optional.

**Syntax**

LO <list> < keywords>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be transformed and < keywords> is one or both of the following:

AL  
BE

**Example**

LO AGE AL=0.5 BE=1.5

**Notes**

- The transformation is defined as:  $y = \log(\alpha + \beta * x)$ , where  $x$  is the untransformed variable and  $y$  is the transformed variable.
- The transformation can be used to approximate normal distribution characteristics of the variables.
- The LO command is intended for continuous variables.
- Some care must be exercised with this command, because there may be values of  $\alpha$  and  $\beta$  for which the transformation is not defined for all values of  $x$  in the data. For example,  $(\alpha + \beta * x)$  must be positive for all values of  $x$  in the data. Otherwise, PRELIS aborts with a fatal error message.

## 5.32 LR Command

**Purpose**

To specify a logistic regression analysis.

**Status**

Optional.

**Syntax**

LR <y> ON <x>

where <y> denotes the list of labels for the ordinal dependent variables and <x> denotes the list of labels for the independent variables (covariates).

**Example**

LR Y1 Y2 on X1-X10

### 5.33 MA Keyword

**Purpose**

To specify the moment matrix to be analyzed.

**Status**

Optional.

**Syntax**

MA=<matrix>

where <matrix> is one of the following

AM	augmented moment matrix
CM	covariance matrix
KM	correlation matrix
MM	matrix of moments about zero
OM	matrix of correlations based on optimal scores
PM	correlation matrix
RM	Spearman rank correlations
TM	(Kendall's tau-c correlations)

**Default**

None

### 5.34 MC Command

**Purpose**

To invoke the Monte Carlo Markov Chain (MCMC) procedure for multiple Imputation of missing values.

**Status**

Optional.

**Syntax**

MC CC=<criterion> IT =<iterations> TC=<treatment>

where <criterion> is the convergence criterion (default CC=0.00001), <iterations> denotes the number of iterations (default IT=200) and <treatment> pertains to the treatment of cases with all values missing and should have one of the following values:

0:	replace with means (default)
1:	keep as missing
2:	delete cases

**Example**

MC CC=0.00001 IT=50 TC=2

## 5.35 ME Keyword

**Purpose**

To specify the name of the text file for the means for each bootstrap sample.

**Status**

Optional.

**Syntax**

ME=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the means for each bootstrap sample.

**Example**

ME=TurnOver.BME

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.36 MI Command

**Purpose**

To specify the imputation of missing values of observed variables by means of imputation by matching.

**Status**

Optional.

**Syntax**

IM (<impute>) (<match>) <keyword> <options>

where <impute> denotes a list of labels or integer positions (separated by blank spaces) of observed variables to be imputed, <match> denotes a list of labels or integer positions (separated by blank spaces) of observed variables to be used as matching variables, <keyword> is VR and <options> is one of XN or XL.

## 5.37 MI Keyword

**Purpose**

To specify the global numerical value(s) that represents all missing values in the data matrix.

**Status**

Optional.

**Syntax**

MI=<values>

where <values> denotes a list of real number(s) separated by commas.

### 5.38 ML Option

**Purpose**

To specify a maximum likelihood exploratory factor analysis.

**Status**

Optional.

**Syntax**

ML

### 5.39 MM Keyword

**Purpose**

To specify the name of the text file for the sample moments about zero.

**Status**

Optional.

**Syntax**

MM=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the sample moments about zero.

**Example**

MM=TurnOver.MM

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

### 5.40 MR Option

**Purpose**

To specify a MINRES exploratory factor analysis.

**Status**

Optional, unless a MINRES exploratory factor analysis is desired.

**Syntax**

MR

## 5.41 MT Command

### Purpose

To specify the estimation of the thresholds from the marginal distributions of a set of ordinal variables.

### Status

Optional.

### Syntax

MT <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be used for estimating the thresholds.

### Example

```
MT Item1 Item12 Item15
```

### Notes

- MT ALL specifies the estimation of the thresholds from the marginal distributions of all the selected ordinal variables.
- The estimated thresholds are held fixed for the subsequent estimation of the regression coefficients in multivariate multinomial probit analysis.
- By default (no MT command), threshold and regression coefficients are estimated jointly.
- As a third alternative, the user may specify fixed thresholds for variables in the probit regressions with the FT command.

## 5.42 NC Keyword

### Purpose

To specify the number of principal components for a principal component analysis.

### Status

Optional, unless the number of components is known.

### Syntax

NC=<number>

where <number> denotes a positive integer greater than zero.

## 5.43 ND Keyword

### Purpose

To specify the number of decimals for the data entries of the transformed raw data file.

### Status

Optional.

### Syntax

ND=<number>



where <number> denotes a positive integer.

**Example**

ND=6

**Default**

ND=3

## 5.44 NE Command

**Purpose**

To specify new variables.

**Status**

Optional.

**Syntax**

NE <label>=<function>

where <label> denotes the label of the new variable and <function> is one of the following:

NRAND  
URAND  
CRAND<n>

Function of the existing variables, NRAND, URAND and CRAND<n> where

<n> denotes a positive integer greater than zero,  
NRAND refers to a standard normal random variable,  
URAND refers to a Uniform (0,1) random variable and  
CRAND<n> refers to a Chi-square random variable with <n> degrees of freedom.

**Notes**

- Use an asterisk (\*) for multiplication.
- Use a double asterisk (\*\*) or caret (^) for exponentiation.
- Parentheses are not permitted, but new variables can be a function of other new variables already defined.
- Division is not permitted but exponents may be negative.

**Examples**

NE var5=2.5\*var1+var2-var3  
NE var8=var1+var\*var3-var2\*\*2  
NE var8=var8\*\*2

## 5.45 NF Keyword

**Purpose**

To specify the number of factors for an exploratory factor analysis.

**Status**

Optional, unless the number of factors is known.

**Syntax**

NF=<number>

where <number> denotes a positive integer greater than zero.

## 5.46 NI Keyword

**Purpose**

To specify the number of variables in the data file.

**Status**

Required.

**Syntax**

NI=<number>

where <number> denotes a positive integer greater than zero.

## 5.47 NO Keyword

**Purpose**

To specify the number of cases or observations in the data file.

**Status**

Required, unless raw data are read in from an external file.

**Syntax**

NO=<number>

where <number> denotes a positive integer greater than zero.

**Default**

NO=0

## 5.48 NS Command

**Purpose**

To specify the computation of normal scores.

**Status**

Optional.

**Syntax**

NS <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables for which normal scores are to be computed.

**Example**

NS Y12-Y35

**Notes**

- NS ALL specifies the computation of normal scores for all the selected variables.
- The variables specified in <list> will be normalized and a resulting summary (covariance or correlation) matrix will be based on those normal scores.
- Normalizing variables is only recommended for continuous variables.
- The normal scores for each case in the data may be saved with a "RA=<filename>" specification on the PRELIS OU command.

## 5.49 OM Keyword

**Purpose**

To specify the name of the text file for the correlation matrix based on optimal scores.

**Status**

Optional.

**Syntax**

OM=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the correlation matrix based on optimal scores.

**Example**

OM=TurnOver.OSC

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.50 OR Command

**Purpose**

To declare variables as ordinal.

**Status**

Optional.

**Syntax**

OR <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be treated as ordinal.

**Examples**

OR Gender Count Attitude  
OR 7 12 18

**Note**

OR ALL specifies all the selected variables to be treated as ordinal.

## 5.51 OU Command

**Purpose**

To specify the matrix to be analyzed and the results to be produced.

**Status**

Required.

**Syntax**

OU <keywords> <options>

where <keywords> is one or more of the following: MA, AC, BM, CM, KM, PM, MM, AM, OM, RA, RM, SA, ME, SD, SM, SR, SV, TH, TM, XO and <options> is one or more of XB, XT, XM, WP.

## 5.52 PC Command

**Purpose**

To specify a principal component analysis.

**Status**

Optional, unless a principal component analysis is desired.

**Syntax**

PC <keyword>

where <keyword> is NC.

## 5.53 PK Option

**Purpose**

To specify the computation and printing of the relative multivariate kurtosis coefficient.

**Status**

Optional.

**Syntax**

PK

## 5.54 PM Keyword

**Purpose**

To specify the name of the text file for the correlation matrix.

**Status**

Optional.

**Syntax**

PM=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the correlation matrix.

**Example**

PM=TurnOver.PCM

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.55 PO Command

**Purpose**

To specify variables to be transformed with a power transformation before the requested moment matrix is computed.

**Status**

Optional.

**Syntax**

PO <list> < keywords>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be transformed and < keywords> is one or both of the following:

AL  
BE  
GA

**Example**

PO AGE AL=0.5 BE=1.5 GA=2

**Notes**

- The transformation is defined as:  $y=(\alpha+\beta*x)**\gamma$ , where x is the untransformed variable and y is the transformed variable.
- The transformation can be used to approximate normal distribution characteristics of the variables.
- The PO command is intended for continuous variables.
- Some care must be exercised with this command, because there may be values of alpha, beta, and gamma for which the transformation is not defined for all values of x in the data. For example, when GA=0.5,  $(\alpha+\beta*x)$  must be non-negative for all observed values of x in the data. Otherwise, PRELIS aborts with a fatal error message.

## 5.56 PR Command

### Purpose

To specify a probit regression analysis.

### Status

Optional.

### Syntax

PR <y> ON <x>

where <y> denotes the list of labels for the ordinal dependent variables and <x> denotes the list of labels for the independent variables (covariates).

### Example

PR Y1 Y2 on X1-X10

## 5.57 PV Option

### Purpose

To specify the printing of the estimated asymptotic variances in the output file.

### Status

Optional.

### Syntax

PV

### Notes

- Do not use the PV option when several vectors of asymptotic estimates are stacked in the same file.
- To save computer memory, the vector of asymptotic estimates requested with "SV=<name>" is computed and written to the file in sections. Only one section of the vector exists in memory at any one time. When PV is specified, all the workspace is devoted to reading the file into memory and producing printed versions of the vector in the output file. This is why PV cannot be specified without the SV=<name> specification.

## 5.58 RA Command

### Purpose

To specify the name of the text file with the raw data to be analyzed.

### Status

Optional, unless the raw data to be analyzed is listed in a text data file.

### Syntax

RA=<filelist> <options>

or

RA <options>  
<matrix>

<options> is one or both of FO and RE.

## 5.59 RA Keyword

### Purpose

To specify the name of the text file or LSF for the transformed raw data matrix.

### Status

Optional.

### Syntax

RA=<name>

where <name> denotes the complete name (including drive and folder names) of the text file or LSF for the transformed raw data matrix.

### Example

RA=TurnOver.LSF

### Notes

- The folder name of the text file or the LSF may be omitted if the text file or the LSF and the PRELIS syntax file are in the same folder.
- The extension “.LSF” should be used to produce a LSF.

## 5.60 RE Command

### Purpose

To recode variables.

### Status

Optional.

### Syntax

RE <list> OLD=<oldvalues> NEW=<newvalues>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be recoded, <oldvalues> denotes a list of the original variable values (separated by commas) of the observed variables to be recoded and <newvalues> denotes a list of the new variable values (separated by commas) of the observed variables to be recoded.

### Examples

```
RE NOSAY - INTEREST OLD=1,2,3,4 NEW=4,3,2,1  
RE NOSAY - INTEREST OLD=1-2,3-4 NEW=1,0  
RE INCOME OLD=50-80,81-150,151-250,251-350,351-500 NEW=1,2,3,4,5
```

### Note

If ALL is specified for <list> the recoding will be applied to all the selected variables.

## 5.61 RE Option (data)

### Purpose

To specify the rewinding of the file to the first data entry.

### Status

Optional.

### Syntax

RE

### Default

No rewind.

## 5.62 RE Option (labels)

### Purpose

To specify the rewinding of the file to the first label.

### Status

Optional.

### Syntax

RE

### Default

No rewind.

## 5.63 RG Command

### Purpose

To specify a univariate or a multivariate multiple linear regression analysis or a two stage least squares regression with instrumental variables.

### Status

Optional.

### Syntax

RG <y> ON <x> [WITH <z>] [RES=<label>]

where <y> denotes the list of labels for the dependent variables, <x> denotes the list of labels for the independent variables, <z> denotes the list of labels for the instrumental variables and <label> denotes the label of the variable for the regression residuals.

### Examples

```
RG Y1 ON Y2 X1 WITH X1 X2 X3
RG Y1 ON Y2 X2 X3 WITH X1 X2 X3 RES=Y1RES
RG 2 ON 1 4 7 with 3 5 6 8 9
RG 3 on 1 4 7 with 2 5 6 8 9
```



## 5.64 RM Keyword

### Purpose

To specify the name of the text file for the Spearman rank correlation matrix.

### Status

Optional.

### Syntax

RM=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the Spearman rank correlation matrix.

### Example

RM=TurnOver.SRC

### Note

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.65 RP Keyword

### Purpose

To specify the number of repetitions of a Monte Carlo or a Bootstrap study.

### Status

Optional, unless Monte Carlo or Bootstrap study data are processed.

### Syntax

RP=<number>

where <number> denotes a positive integer greater than zero.

### Default

RP=1

## 5.66 SA Keyword

### Purpose

To specify the name of the binary file for the estimated asymptotic covariance matrix of the non-duplicated elements of the moment matrix.

### Status

Optional.

### Syntax

SA=<name>

where <name> denotes the complete name (including drive and folder names) of the binary file for the estimated asymptotic covariance matrix.

**Example**

SA=TurnOver.ACM

**Note**

The folder name of the binary file may be omitted if the binary file and the PRELIS syntax file are in the same folder.

## 5.67 SC Command

**Purpose**

To specify the selection of specific cases for the analysis.

**Status**

Optional.

**Syntax**

SC <list> <conditions>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be excluded from the analysis and <conditions> is a list of conditions each with the following syntax:

<operator> <value>

where <operator> is one of:

=  
<  
>

and <value> denotes a real number

or

SC CASE=<condition>

where <condition> is one of:

ODD  
EVEN  
< <number>  
> <number>

where <number> denotes a positive integer greater than zero.

**Examples**

SC CASE<100  
SC 2 7-11 = 2  
SC 2, 7-11 >1 < 4

## 5.68 SD Command

### Purpose

To specify the selection of specific cases for the analysis as such that the variables used to specify the selection criteria are deleted from the data to be analyzed.

### Status

Optional.

### Syntax

SD <varlist> <conditions>

where <conditions> is a list of conditions each with the following syntax:

<operator> <number>

where <operator> is one of:

=

<

>

or

SC CASE=<condition>

where <condition> is one of:

ODD

EVEN

< <number>

> <number>

### Examples

SD CASE<100

SD 2 7-11 = 2

SD 2, 7-11 >1 < 4

## 5.69 SD Keyword

### Purpose

To specify the name of the text file for the standard deviations for each bootstrap sample.

### Status

Optional.

**Syntax**

SD=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the standard deviations for each bootstrap sample.

**Example**

SD=TurnOver.BSD

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.70 SE Command

**Purpose**

To select any subset of variables in any order for the analysis.

**Status**

Optional.

**Syntax**

SE <list>

where <list> denotes a list of labels or integer positions (separated by blank spaces) of the observed variables to be selected for the analysis.

**Examples**

SE 3 4 8 1 5 18

SE Age Gender Math Science

## 5.71 SF Keyword

**Purpose**

To specify the sample fraction of each bootstrap sample as a percentage.

**Status**

Optional.

**Syntax**

SF=<number>

where <number> denotes any integer from 1 to 100.

**Example**

SF=50

## 5.72 SM Keyword

**Purpose**

To specify the name of the text file for the moment matrix to be analyzed.

**Status**

Optional.

**Syntax**

SM=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the moment matrix to be analyzed.

**Example**

SM=TurnOver.COV

**Note**

The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.73 SR Keyword

**Purpose**

To specify the name of the text file or LSF for the transformed raw data matrix.

**Status**

Optional.

**Syntax**

SR=<name>

where <name> denotes the complete name (including drive and folder names) of the text file or LSF for the transformed raw data matrix.

**Example**

SR=TurnOver.LSF

**Notes**

- The folder name of the text file or the LSF may be omitted if the text file or the LSF and the PRELIS syntax file are in the same folder.
- The extension “.LSF” should be used to produce a LSF.

## 5.74 SV Keyword

**Purpose**

To specify the name of the binary file for the estimated asymptotic variances of the non-duplicated elements of the moment matrix.

**Status**

Optional.

**Syntax**

SV=<name>

where <name> denotes the complete name (including drive and folder names) of the binary file for the estimated asymptotic variances.

**Example**

SV=TurnOver.AVA

**Note**

The folder name of the binary file may be omitted if the binary file and the PRELIS syntax file are in the same folder.

## 5.75 SY Command

**Purpose**

To specify the LISREL System File (LSF) to be analyzed.

**Status**

Optional, unless a LSF is to be analyzed.

**Syntax**

SY=<name>

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

**Example**

SY=Satisfaction.LSF

**Notes**

- The SY command replaces the DA, LA and RA commands.
- The SY command should be the first PRELIS command.
- The folder name of the LSF may be omitted if the LSF and the PRELIS syntax file are in the same folder.

## 5.76 TH Keyword

**Purpose**

To specify the name of the text file for the common threshold estimates of the ordinal variables.

**Status**

Optional.

**Syntax**

TH=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the common threshold estimates.

**Example**

TH=TurnOver.THR

**Notes**  
The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.77 TI command

**Purpose**  
To specify a descriptive title for the analysis.

**Status**  
Optional.

**Syntax**  
TI  
<lines>

where <lines> denote a line(s) specifying a title for the analysis.

**Example**  
TI  
A model for Job Satisfaction and Organizational Commitment

- Notes**
- Everything before the line that has DA as the first two non-blank characters (indicating the first PRELIS command line) will be regarded as title lines.
  - Do not start a title line with the letters DA, or the words Labels or Observed Variables.
  - Starting each title line with an exclamation mark (“!”), indicating a comment, is recommended to avoid such conflict.

## 5.78 TM Keyword

**Purpose**  
To specify the name of the text file for the Kendall’s tau-c correlation matrix.

**Status**  
Optional.

**Syntax**  
TM=<name>

where <name> denotes the complete name (including drive and folder names) of the text file for the Kendall’s tau-c correlation matrix.

**Example**  
TM=TurnOver.SRC

**Note**  
The folder name of the text file may be omitted if the text file and the PRELIS syntax file are in the same folder.

## 5.79 TR Keyword

### Purpose

This keyword specifies the global treatment of missing data.

### Status

Optional.

### Syntax

TR=<option>

where <option> is one of:

PA

LI

for pair-wise and list-wise deletion respectively.

### Default

TR=LI

## 5.80 VR Keyword

### Purpose

When there are several matching cases, VR (variance ratio) specifies the upper limit for imputation.

### Status

Optional.

### Syntax

VR=<value>

where <value> denotes a real number between zero and one.

### Default

VR=.5

### Notes

- Larger values than 0.5 are not recommended.
- Smaller values may be used if one requires high precision in the imputation.
- For each value imputed, PRELIS gives the value of the variance ratio and the number of cases on which the matching is based.

## 5.81 WE Command

### Purpose

To specify one variable as a weight variable.



**Status**  
Optional.

**Syntax**  
WE <label>

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

**Example**  
WE USUWT

## 5.82 WI Keyword

**Purpose**  
To specify the width for the data entries of the transformed raw data file.

**Status**  
Optional.

**Syntax**  
WI=<number>

where <number> denotes a positive integer greater than zero.

**Example**  
WI=10

**Default**  
WI=12

## 5.83 WP Option

**Purpose**  
To specify a column width of 132 for the output file.

**Status**  
Optional.

**Syntax**  
WP

## 5.84 XB Option

**Purpose**  
To suppress the printing of the bivariate frequency tables in the output file.

**Status**  
Optional.

**Syntax**  
XB

**Note**

Bivariate tables and test statistics are included in the standard output when MA=PM has been specified. These tables may contain important information, and most users will want to inspect them. However, when the number of variables becomes large, bivariate frequency tables and test statistics will create a very large output file.

**5.85 XL Option****Purpose**

To suppress the listing of the imputations (successful or not) in the output file.

**Status**

Optional.

**Syntax**

XL

**5.86 XM Option****Purpose**

To suppress the performance of tests of multivariate normality.

**Status**

Optional.

**Syntax**

XM

**5.87 XN Option****Purpose**

To suppress the listing of the unsuccessful imputations in the output file.

**Status**

Optional.

**Syntax**

XN

**5.88 XO Keyword****Purpose**

To specify the number of repetitions of Monte Carlo or Bootstrap data for which results should be written to the output file.

**Status**

Optional

**Syntax**

XO=<number>

where <number> denotes a positive integer.

**Example**

XO=5

## 5.89 XT Option

**Purpose**

To suppress the printing of the test statistic values for bivariate normality in the output file.

**Status**

Optional.

**Syntax**

XT

**Note**

Bivariate tables and test statistics are included in the standard output when MA=PM has been specified. These tables may contain important information, and most users will want to inspect them. However, when the number of variables becomes large, bivariate frequency tables and test statistics will create a very large output file.