Package 'eqs2lavaan'

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Type Package

Title EQS Output Conversion to lavaan Functions

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Description Transitioning from EQS to R for structural equation modeling (SEM)
is made easier with a set of functions to convert .out files into R code.
The EQS output can be converted into lavaan syntax and run in the R
environment. Other functions parse descriptive statistics and the covariance matrix
from an EQS .out file. A heat map plot of a covariance matrix is also
included.

License GPL-2

Depends lavaan, stringr

Collate 'eqs2lavaan.R' 'eqsCorr.R' 'eqsCov.R' 'eqsDesc.R'
'out2lavaan.R' 'plotCov.R'

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eqs2lavaan-package   *EQS Output Conversion to lavaan Functions*

Description

Transitioning from EQS to R for structural equation modeling (SEM) is made easier with a set of functions to convert .out files into R code. The EQS output can be converted into lavaan syntax and run in the R environment. Other functions parse descriptive statistics and the covariance matrix from an EQS .out file. A heat map plot of a covariance matrix is also included.

Details

Package:	eqs2lavaan
Type:	Package
Version:	1.0
Date:	2013-07-25
License:	GPL-2

Author(s)

Craig M. Krebsbach Maintainer: Craig M. Krebsbach <craigmk@my.uri.edu>

References

Bentler, P. M. (2008). EQS Program Manual. Encino, CA: Multivariate Software Inc.

Rosseel, Yves (2012). lavaan: An R Package for Structural Equation Modeling. Journal of Statistical Software, 48(2), 1-36. http://www.jstatsoft.org/v48/i02/.

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eqs2lavaan   *Convert EQS Output to lavaan Syntax*

Description

By using an unedited .out file from EQS, the needed information can be extracted for use in R. The resulting syntax will be converted to lavaan. Because of the various scripting techniques in EQS, not all output will translate perfect to EQS (a warning will be supplied instead of results). To get the most out of your code conversion, be sure to understand how to use lavaan for SEM research.

Usage

```
eqs2lavaan(eqs, data = NULL)
```

Arguments

eqs	Specific path location of an EQS .out file. If this file is in your R directory, only the title will be necessary, otherwise a path location will also be needed.
data	Optional use of data already imported in R. Specifying a path location of a .csv file will also allow the data to be entered into the syntax as opposed to the shortened covariance matrix and descriptive statistics from the .out file. Actual data will provide closer results to those in EQS because rounding will not occur.

Details

Conversion errors are always possible and .out files for failed conversions would be greatly appreciated for future updates. Send any misread .out files to the author at craigmk@my.uri.edu. The translated lavaan code is checked for similarity to the EQS chi-square goodness of fit and thus erroneous results will not be returned. Only standard models will likely translate correctly as simulations, groups comparisons, and growth models are not included as of the initial release.

Value

An object of class lavaan,

Author(s)

Craig M. Krebsbach <craigmk@my.uri.edu>

References

Bentler, P. M. (2008). EQS Program Manual. Encino, CA: Multivariate Software Inc.

Yves Rosseel (2012). lavaan: An R Package for Structural Equation Modeling. Journal of Statistical Software, 48(2), 1-36. URL http://www.jstatsoft.org/v48/i02/.

See Also

lavaan plotCov eqsDesc

Examples

```
# EQS required to get a necessary .out file
# Run for62.eqs from the EQS examples and save .out to R directory location

## Not run: e2l <- eqs2lavaan("for62.out")
## Not run: summary(e2l)
```

---

eqsCorr   *Translate Covariance Matrix in EQS Output to a Correlation Matrix in R*

Description

The EQS .out file contains all the necessary information to return a correlation matrix. This function allows you to extract the necessary info and save the correlation matrix for your own use in R.

Usage

```
eqsCorr(eqs)
```

Arguments

eqs   A valid unedited .out file from EQS output.

Value

A correlation matrix.

Note

This function will still be usable for more complex SEM models that end up not being translatable by eqs2lavaan.

Author(s)

Craig M. Krebsbach <craigmk@my.uri.edu>

References

Bentler, P. M. (2008). EQS Program Manual. Encino, CA: Multivariate Software Inc.

Yves Rosseel (2012). lavaan: An R Package for Structural Equation Modeling. Journal of Statistical Software, 48(2), 1-36. URL http://www.jstatsoft.org/v48/i02/.

See Also

plotCov eqsCorr eqsDesc eqs2lavaan

Examples

```
# EQS required to get a necessary .out file
# Run for62.eqs from the EQS examples and save .out to R directory location

## Not run: eqsCorr("for62.out")
```

---

eqsCov | *Translate Covariance Matrix in EQS Output to a Covariance Matrix in R*

Description

Extract the covariance matrix from an appropriate EQS .out file for your usage in R.

Usage

```
eqsCov(eqs)
```

Arguments

eqs   A valid unedited .out file from EQS output.

Value

A covariance matrix.

Note

This function will still be usable for more complex SEM models that end up not being translatable by eqs2lavaan.

Author(s)

Craig M. Krebsbach <craigmk@my.uri.edu>

References

Bentler, P. M. (2008). EQS Program Manual. Encino, CA: Multivariate Software Inc.

Yves Rosseel (2012). lavaan: An R Package for Structural Equation Modeling. Journal of Statistical Software, 48(2), 1-36. URL http://www.jstatsoft.org/v48/i02/.

See Also

plotCov eqsCorr eqsDesc eqs2lavaan

Examples

```
# EQS required to get a necessary .out file
# Run for62.eqs from the EQS examples and save .out to R directory location

## Not run: eqsCov("for62.out")
```

---

eqsDesc	*Extract Descriptive Statistics from an EQS Output File*

Description

Mean, standard deviation, kurtosis, and skewness are displayed in an EQS .out file and this function converts these into R for your use. The returned matrix will display the vitals for all relevant variables and can be selected by column.

Usage

```
eqsDesc(eqs)
```

Arguments

eqs   A valid unedited .out file from EQS output.

Value

A matrix with four columns (mean, sd, skewness, and kurtosis).

Note

This function will still be usable for more complex SEM models that end up not being translatable by eqs2lavaan.

Author(s)

Craig M. Krebsbach <craigmk@my.uri.edu>

References

Bentler, P. M. (2008). EQS Program Manual. Encino, CA: Multivariate Software Inc.

Yves Rosseel (2012). lavaan: An R Package for Structural Equation Modeling. Journal of Statistical Software, 48(2), 1-36. URL http://www.jstatsoft.org/v48/i02/.

See Also

eqs2lavaan eqsCov eqsCorr

Examples

```
# EQS required to get a necessary .out file
# Run for62.eqs from the EQS examples and save .out to R directory location

## Not run: eqsCorr("for62.out")
```

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out2lavaan   *Function Called by the eqs2lavaan Function*

Description

Returns a list of extracted information from the EQS .out file.

Usage

```
out2lavaan(eqs)
```

Arguments

eqs   Specific path location of an EQS .out file. If this file is in your R directory, only
                    the title will be necessary, otherwise a path location will also be needed.

Details

This is a function that is referenced mainly by [eqs2lavaan](#), however it can be used in a standalone
format as well.

Value

A list of the covariance matrix and descriptive statistics extracted from the EQS .out file supplied.

References

Bentler, P. M. (2008). EQS Program Manual. Encino, CA: Multivariate Software Inc.

Yves Rosseel (2012). lavaan: An R Package for Structural Equation Modeling. Journal of Statistical
Software, 48(2), 1-36. URL http://www.jstatsoft.org/v48/i02/.

See Also

[eqs2lavaan](#)

Examples

```
# EQS required to get a necessary .out file
# Run for62.eqs from the EQS examples and save .out to R directory location

## Not run: out2lavaan("for62.out")
```

plotCov   *Plot a Covariance/Correlation Heat Map*

Description

Any covariance matrix can be entered and an image with covariance and correlation matrices will be plotted.

Usage

```
plotCov(cov)
```

Arguments

cov   A covariance matrix.

Value

An image containing heat map based items for the covariance and resulting correlation matrix.

Note

The diagonal is all 1's from the covariance matrix, the correlation matrix diagonal of all 1's is left out. No EQS code is necessary to use this function, it will work with any covariance matrix.

Author(s)

Craig M. Krebsbach <craigmk@my.uri.edu>

See Also

eqsCov eqsCorr eqsDesc cor2cov

Examples

```
library(datasets)
plotCov(ability.cov$cov)
plotCov(cov(attitude))

library(lavaan)
HolzingerSwineford1939
# Select variables x1-x9 only
HS39 <- cov(HolzingerSwineford1939[,7:15])
plotCov(HS39)
```

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