

Package ‘stim’

January 23, 2023

Title Incorporating Stability Information into Cross-Sectional Estimates

Version 1.0.0

Description The goal of 'stim' is to provide a function for estimating the Stability Informed Model. The Stability Informed Model integrates stability information (how much a variable correlates with itself in the future) into cross-sectional estimates. Wysocki and Rhemtulla (2022) <<https://psyarxiv.com/vg5as>>.

License MIT + file LICENSE

Encoding UTF-8

RoxygenNote 7.2.2

Imports lavaan, Ryacas, stats

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

NeedsCompilation no

Author Anna Wysocki [aut, cre]

Maintainer Anna Wysocki <awysocki@ucdavis.edu>

Repository CRAN

Date/Publication 2023-01-23 10:20:02 UTC

R topics documented:

effectTable	2
lavaanSummary	2
stim	3
summary.stim	4
Index	5

effectTable *Create a parameter table*

Description

Create a parameter table

Usage

```
effectTable(model)
```

Arguments

model An object with the model description for the cross-sectional model in lavaan syntax

Value

A list with information on the cross-lagged paths and the residual covariances. The cross-lagged effect table has information on which cross-lagged effects to estimate and which to constrain. Each row represents one effect and specifies which variable is the predictor and outcome of the effect. The name column contains information on either the name of the estimated effect (e.g., CLxy) or what value the unestimated effect should be constrained to (e.g., .3). The residual covariance list has the lavaan syntax to specify that specific residuals should be allowed to covary, and a table with information on which variables should have covarying residuals and what the name of that residual covariance parameter should be.

Examples

```
#estimate effect from X to Y
#constrain effect from Y to X to .3
#allow X and Y's residuals to covary
model <- c('Y ~ X
           X ~ .3 * Y
           X ~~ Y')

effectTable(model)
```

lavaanSummary *Outputs Lavaan Summary*

Description

Outputs Lavaan Summary

Usage

```
lavaanSummary(x, subset = NULL)
```

Arguments

`x` a stim Object

`subset` Specify which model(s) you would like summarized. Default is to output all estimated models

Value

Lavaan summary table

Examples

```
model <- 'Y~X'
stability <- data.frame(X = c(.3, .4, .5), Y = c(.3, .5, .6))
dat <- data.frame(Y = rnorm(500, 0, 1), X = rnorm(500, 0, 1), Z = rnorm(500, 0, 1))

output <- stim(data = dat, model = model, stability = stability)

lavaanSummary(output, subset = c(1,2))
```

stim

Estimate a Stability Informed Model

Description

Estimate a Stability Informed Model

Usage

```
stim(data = NULL, S = NULL, n = NULL, model, stability)
```

Arguments

`data` A dataframe with the measured variables. Not needed if S is provided

`S` A covariance matrix for the measured variables. Not needed if data is provided.

`n` Number of observations. Not needed if data is provided.

`model` An object with the cross-sectional model description in lavaan syntax

`stability` An object that contains stability information for each variable in the model.

Value

An object of class stim

Examples

```
model <- 'Y~X'
stability <- data.frame(X = .3, Y = .3)
dat <- data.frame(Y = rnorm(500, 0, 1), X = rnorm(500, 0, 1))

stim(data = dat, model = model, stability = stability)
```

summary.stim

Summary method for stim objects

Description

Summarize a set of Stability Informed Models

Usage

```
## S3 method for class 'stim'
summary(object, ...)
```

Arguments

object	An object of class stim
...	Not used

Value

A print out containing the results for a set of Stability Informed Models

See Also

[stim](#)

Examples

```
model <- 'Y~X'
stability <- data.frame(X = .3, Y = .3)
dat <- data.frame(Y = rnorm(500, 0, 1), X = rnorm(500, 0, 1))

modelFit <- stim(data = dat, model = model, stability = stability)

summary(modelFit)
```

Index

`effectTable`, 2

`lavaanSummary`, 2

`stim`, 3, 4

`summary.stim`, 4