Package: stim (via r-universe)

September 11, 2024

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>.

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Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.2

Imports lavaan, Ryacas, stats

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

Repository https://annawysocki.r-universe.dev

RemoteUrl https://github.com/annawysocki/stim

RemoteRef HEAD

RemoteSha 4032cb7d205a5dc7808dd88de6edf86cb7982c0d

Contents

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))
```

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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)
```

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