Package: mxmmod (via r-universe)

November 18, 2026

Type Package

Title Measurement Model of Derivatives in 'OpenMx'

Version 1.1.0

Description Provides a convenient interface in 'OpenMx' for building Estabrook's (2015) <doi:10.1037/a0034523> Measurement Model of Derivatives (MMOD).

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Encoding UTF-8

LazyData true

Imports OpenMx

Suggests knitr, rmarkdown, testthat, tidyverse

VignetteBuilder knitr

RoxygenNote 7.1.1

Depends R (>= 2.10)

Config/pak/sysreqs cmake make

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`mxMmodModel` *Create an MMOD*

Description

This function builds a Measurement Model of Derivatives (MMOD; Estabrook 2015) with a given factor structure.

Usage

```
mxMmodModel(
  data,
  modelName,
  idvar,
  timevar,
  structure,
  orthogonal = F,
  embed_dim = NULL,
  fiml = F
)
```

Arguments

`data`	a data frame with measurements in long format
`modelName`	name for the resulting model
`idvar`	name of column for subject IDs
`timevar`	name of column for measurement occasion
`structure`	factor structure, see 'Details'
`orthogonal`	if true, fix correlations between factors to 0 (A factor and its derivatives will still intercorrelate)
`embed_dim`	time delay embedding dimension
`fiml`	if true, use raw data to fit model with FIML. Otherwise, fit using cov matrix (dropping missing values if necessary).

Details

The `structure` argument is a list of latent factors and their mappings to manifest variables. For example, a one factor structure would be:

`list(F1 = c('m1', 'm2', 'm3', 'm4', 'm5', 'm6'))`

And a two factor structure would be:

`list(F1 = c('m1', 'm2', 'm3'), F2 = c('m4', 'm5', 'm6'))`

Value

an MMOD as an mxModel object

Examples

```
data(nlsy97depression)
# Fit one factor MMOD
structure <- list(
  F1 = c('nervous', 'down', 'depressed', 'calm', 'happy')
)
mmod_model <- mxMmodModel(data=nlsy97depression,
                          modelName='1 Factor MMOD',
                          idvar='pid', timevar='occasion', structure=structure)
mmod_fit <- OpenMx::mxRun(mmod_model)
summary(mmod_fit)
```

`nlsy97depression` *NLSY97 Longitudinal Depression Scale Data*

Description

A 5-item depression scale used on the National Longitudinal Survey of Youth, 1997 sample (NLSY97). Individuals were assessed in 2000, 2002, and 2004. All items are assessed on a 4-point likert scale.

Usage

```
nlsy97depression
```

Format

A data frame with 26952 rows and 7 variables:

pid Unique ID of participant

sex Sex of participant

birth_m Birth Month

birth_y Birth Year

occasion Measurement occasion

nervous How often participant felt 'like a nervous person'

calm How often participant felt 'calm and peaceful'

down How often participant felt 'down or blue'

happy How often participant felt 'like a happy person'

depressed How often participant felt 'depressed'

Source

https://www.bls.gov/nls/nlsy97.htm

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