Package ‘mxmmod’

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Type Package
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Create an MMOD

Description

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

Usage

```r
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:

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

And a two factor structure would be:

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

Value

an MMOD as an mxModel object
Examples

```r
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)
```

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**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](https://www.bls.gov/nls/nlsy97.htm)
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