Package: lavinteract (via r-universe)

June 3, 2026

Type Package

Title Interaction Testing and Plotting for lavaan Fitted Objects

Version 0.1.0

Description Tools to test and visualize moderation in structural equation models fitted with 'lavaan'. Computes conditional (simple) slopes across moderator values and produces predicted lines with Wald confidence ribbons using model estimates and their covariance without refitting. Accepts continuous or categorical moderators. See Rosseel (2012) <doi:10.18637/jss.v048.i02>; Preacher, Curran, and Bauer (2006) <doi:10.1207/s15327906mbr4101_1>.

URL https://github.com/g-corbelli/lavinteract

BugReports https://github.com/g-corbelli/lavinteract/issues

License GPL-3

Encoding UTF-8

LazyData true

Imports lavaan, ggplot2, stats

Suggests testthat (>= 3.0.0), knitr, rmarkdown

Language en-US

NeedsCompilation no

Maintainer Giuseppe Corbelli <giuseppe.corbelli@uniroma1.it>

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Repository https://g-corbelli.r-universe.dev

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RemoteUrl https://github.com/g-corbelli/lavinteract

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Contents

`lav_slopes` *Simple slopes and interaction plots for fitted* `lavaan` *models*

Description

Computes conditional (simple) slopes of a focal predictor across values of a moderator from a fitted `lavaan` model that includes their explicit product term. Plots predicted lines with Wald confidence ribbons, and print an APA-style test of the interaction for easy reporting and interpretation, plus a simple-slopes table.

Usage

```
lav_slopes(
  fit,
  outcome,
  pred,
  modx,
  interaction,
  data = NULL,
  modx.values = NULL,
  modx.labels = NULL,
  pred.range = NULL,
  conf.level = 0.95,
  x.label = NULL,
  y.label = NULL,
  legend.title = NULL,
  colors = NULL,
  line.size = 0.80,
  alpha = 0.20,
  table = TRUE,
  digits = 2,
  modx_n_unique_cutoff = 4L,
  return_data = FALSE
)
```

Arguments

`fit`	A fitted `lavaan` object that includes the product term (required).
`outcome`	Character. Name of the dependent variable in `fit` (required).
`pred`	Character. Name of the focal predictor whose simple slopes are probed (required).

modx	Character. Name of the moderator (required).
interaction	Character. Name of the product term in fit (e.g., "X_Z") (required).
data	data.frame. Raw data. If NULL, the function tries to pull data from fit via lavInspect.
modx.values	Numeric or character vector. Values or levels of the moderator at which to compute slopes; derived automatically when NULL.
modx.labels	Character vector. Legend/table labels for modx.values (default: the character form of modx.values).
pred.range	Numeric length-2. Range c(min, max) for the x-axis; uses observed range in data when available, else c(-2, 2).
conf.level	Numeric in (0,1). Confidence level for CIs and ribbons (default: 0.95).
x.label	Character. X-axis label (default: pred).
y.label	Character. Y-axis label (default: outcome).
legend.title	Character. Legend title; if NULL, the legend shows only levels (default: NULL).
colors	Character vector. Colors for lines and ribbons; named vector recommended with names matching modx.labels (default: Okabe–Ito palette).
line.size	Numeric > 0. Line width (default: 0.80).
alpha	Numeric in (0,1). Ribbon opacity (default 0.20).
table	Logical. Print APA-style interaction test and simple-slopes table (default: TRUE).
digits	Integer >= 0. Decimal digits in printed output (default: 2).
modx_n_unique_cutoff	Integer >= 1. Threshold for treating a numeric moderator as continuous and using mean ± SD (default: 4).
return_data	Logical. If TRUE, include the plotting data.frame in the returned list (default: FALSE).

Details

The model should include a main effect for the predictor, a main effect for the moderator, and their product term. The simple slope of the predictor at a given moderator value combines the predictor main effect with the interaction term. The moderator can be continuous or categorical. Standard errors use the delta method with the model covariance matrix of the estimates.

Value

A list with elements:

plot ggplot object with lines and confidence ribbons.

slope_table Data frame with moderator levels, simple slopes, SE, z, and CI.

plot_data Only when return_data = TRUE: data used to build the plot.

Notes

Estimates are unstandardized; a standardized beta for the interaction is also reported for reference. Wald tests assume large-sample normality of estimates.

Examples

```
## Not run:
library(lavaan)
# Fit a model with X, Z, and their product X_Z predicting Y
# model <- ' Y ~ X + Z + X_Z '
# fit <- sem(model, data = your_data)
# lav_slopes(fit, outcome = "Y", pred = "X", modx = "Z",
#            interaction = "X_Z", legend.title = "Moderator")

## End(Not run)
```

`lavinteract` *Interaction Testing and Plotting for* `lavaan` *Fitted Objects*

Description

Tools to test and visualize moderation in structural equation models fitted with `lavaan` using model estimates and their covariance without refitting. The framework accepts continuous or categorical moderators.

Details

The function is:

- `lav_slopes`: simple slopes and interaction plots from a fitted `lavaan` model.

Note

The development of this package was possible only thanks to the constant interaction (sic) with Dr. Cataldo Giuliano Gemmano (ORCID: 0000-0003-4519-8594), and particularly because of his sustained feedback and support.

Author(s)

Giuseppe Corbelli (<giuseppe.corbelli@uniroma1.it>, or <giuseppe.corbelli@uninettunouniversity.net>)

See Also

Useful links:

- https://github.com/g-corbelli/lavinteract
- Report bugs at https://github.com/g-corbelli/lavinteract/issues

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