Package 'lavaanPlot'

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Type Package

Title Path Diagrams for 'Lavaan' Models via 'DiagrammeR'

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URL https://github.com/alishinski/lavaanPlot, https://lavaanplot.alexlishinski.com/

Description Plots path diagrams from models in 'lavaan' using the plotting functionality from the 'DiagrammeR' package. 'DiagrammeR' provides nice path diagrams via 'Graphviz', and these functions make it easy to generate these diagrams from a 'lavaan' path model without having to write the DOT language graph specification.

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Encoding UTF-8

Imports lavaan, DiagrammeR, stringr, magrittr, dplyr, purrr, rlang

RoxygenNote 7.2.3

Suggests knitr, rmarkdown, DiagrammeRsvg, rsvg, png, testthat (>= 3.0.0)

VignetteBuilder knitr

Config/testthat/edition 3

NeedsCompilation no

Repository CRAN

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Contents

`buildCall` *Builds the Diagrammer function call.*

Description

Builds the Diagrammer function call.

Usage

```
buildCall(
  model = model,
  name = name,
  labels = labels,
  graph_options = list(overlap = "true", fontsize = "10"),
  node_options = list(shape = "box"),
  edge_options = list(color = "black"),
  ...
)
```

Arguments

`model`	A model fit object of class lavaan.
`name`	A string of the name of the plot.
`labels`	An optional named list of variable labels fit object of class lavaan.
`graph_options`	A named list of graph options for Diagrammer syntax.
`node_options`	A named list of node options for Diagrammer syntax.
`edge_options`	A named list of edge options for Diagrammer syntax.
`...`	additional arguments to be passed to `buildPaths`

Value

A string specifying the path diagram for `model`

buildLabels *Adds variable labels to the Diagrammer plot function call.*

Description

Adds variable labels to the Diagrammer plot function call.

Usage

```
buildLabels(label_list)
```

Arguments

label_list	A named list of variable labels.

buildPaths *Extracts the paths from the lavaan model.*

Description

Extracts the paths from the lavaan model.

Usage

```
buildPaths(
  fit,
  coefs = FALSE,
  sig = 1,
  stand = FALSE,
  covs = FALSE,
  stars = NULL,
  digits = 2
)
```

Arguments

fit	A model fit object of class lavaan.
coefs	whether or not to include significant path coefficient values in diagram
sig	significance level for determining what significant paths are
stand	Should the coefficients being used be standardized coefficients
covs	Should model covariances be included in the diagram
stars	a character vector indicating which parameters should include significance stars be included for regression paths, latent paths, or covariances. Include which of the 3 you want ("regress", "latent", "covs"), default is none.
digits	A number indicating the desired number of digits for the coefficient values in the plot

convert_graph *Uses the diagrammeR functions to turn the ndf and edf into dot*

Description

Uses the diagrammeR functions to turn the ndf and edf into dot

Usage

```
convert_graph(ndf, edf, graph_options)
```

Arguments

ndf	A node data frame created by create_nodes
edf	An edge data frame created by create_edges
graph_options	a named list of graphviz graph attributes

Value

DOT specification of model

create_edges *Creates edge data frame and adds formatting*

Description

Creates edge data frame and adds formatting

Usage

```
create_edges(
  coefs,
  ndf,
  edge_options,
  coef_labels = FALSE,
  stand = FALSE,
  stars = NULL,
  sig = 1
)
```

Arguments

coefs	a coefficient table from lavaan model created by extract_coefs
ndf	A node data frame created by create_nodes
edge_options	a named list of graphviz edge attributes, or a data frame of edge options created by formatting, or a list of such data frames containing 1 set of edge options and one set of custom options
coef_labels	whether to label edges with coefficient values
stand	Should the coefficients being used be standardized coefficients
stars	a character vector indicating which parameters should include significance stars be included for regression paths, latent paths, or covariances. Include which of the 3 you want ("regress", "latent", "covs"), default is none.
sig	significance level for determining what significant paths are

Value

an edge data frame

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create_grviz *Creates the grViz dot language code for plotting*

Description

Creates the grViz dot language code for plotting

Usage

```
create_grviz(
  model,
  labels = labels,
  include = include,
  graph_options = graph_options,
  node_options = node_options,
  edge_options = edge_options,
  stand = stand,
  ...
)
```

Arguments

model	A model fit object of class lavaan.
labels	An optional named list of variable labels.
include	which parameters to include in the plot. Default is all regression and latent relationships. "covs" will also include covariances, while "all will also include error variances.

graph_options	a named list of graphviz graph attributes
node_options	a named list of graphviz node attributes
edge_options	a named list of graphviz edge attributes
stand	Should the coefficients being used be standardized coefficients
...	Additional arguments to be passed to create_edges

Value

A string specifying the path diagram for model

---

create_nodes *Creates node data frame and adds formatting*

Description

Creates node data frame and adds formatting

Usage

```
create_nodes(coefs, labels = NULL, node_options)
```

Arguments

coefs	a coefficient table from lavaan model created by extract_coefs
labels	An optional list of labels
node_options	a named list of graphviz node attributes, or a data frame of node options created by formatting,

Value

an edge data frame

---

embed_plot_pdf *Embeds a plot into an rmarkdown pdf*

Description

Embeds a plot into an rmarkdown pdf

Usage

```
embed_plot_pdf(plot, path, width = NULL, height = NULL)
```

Arguments

plot	plot object created by lavaanPlot
path	Filename to save the image
width	width of image in pixels, NULL for default
height	height of image, NULL for default

Value

no return value calls include_graphics to embed plot in pdf

Examples

```
library(lavaan)
model <- 'mpg ~ cyl + disp + hp
          qsec ~ disp + hp + wt'
fit <- sem(model, data = mtcars)
pl <- lavaanPlot(model = fit)
## Not run:
embed_plot_pdf(pl, "plot2.pdf")

## End(Not run)
```

---

extract_coefs *Creates a data frame of the parameter table from lavaan model*

Description

Creates a data frame of the parameter table from lavaan model

Usage

```
extract_coefs(model, include = NULL, stand = FALSE)
```

Arguments

model	A fitted model of class lavaan
include	which parameters to include in the plot. Default is all regression and latent relationships. "covs" will also include covariances, while "all" will also include error variances.
stand	Should the coefficients being used be standardized coefficients

Value

a data frame with lavaan model parameters

formatting *Enables conditional formatting for different parts of the model*

Description

Enables conditional formatting for different parts of the model

Usage

```
formatting(..., type, groups)
```

Arguments

...	lists of node or edge options for each of the groups
type	type of conditional formatting being used, node, edge, or custom; custom only works with edges
groups	character vector of the names of custom groups, with nodes and edges default values are set and you need to match the order: for nodes: c("latent", "obs"), for edges: c("regress", "latent", "covs"). For custom groups of edges, you must match names that you pre-multiply with coefficients in your model specification.

Value

a formatting data frame that can work with the create_nodes and create_edges functions

getNodes *Extracts the paths from the lavaan model.*

Description

Extracts the paths from the lavaan model.

Usage

```
getNodes(fit)
```

Arguments

fit	A model fit object of class lavaan.

lavaanPlot *Plots lavaan path model with DiagrammeR*

Description

Plots lavaan path model with DiagrammeR

Usage

```
lavaanPlot(model, name = "plot", labels = NULL, ...)
```

Arguments

model	A model fit object of class lavaan.
name	A string of the name of the plot.
labels	An optional named list of variable labels.
...	Additional arguments to be called to buildCall and buildPaths

Value

A Diagrammer plot of the path diagram for model

Examples

```
library(lavaan)
model <- 'mpg ~ cyl + disp + hp
          qsec ~ disp + hp + wt'
fit <- sem(model, data = mtcars)
lavaanPlot(model = fit, node_options = list(shape = "box", fontname = "Helvetica"),
 edge_options = list(color = "grey"), coefs = FALSE)
```

lavaanPlot2 *Plots lavaan path model with DiagrammeR*

Description

Plots lavaan path model with DiagrammeR

Usage

```
lavaanPlot2(
  model,
  labels = NULL,
  include = NULL,
  gr_viz = NULL,
  graph_options = NULL,
  node_options = NULL,
  edge_options = NULL,
  stand = FALSE,
  ...
)
```

Arguments

model	A model fit object of class lavaan.
labels	An optional named list of variable labels.
include	which parameters to include in the plot. Default is all regression and latent relationships. "covs" will also include covariances, while "all will also include error variances.
gr_viz	pass a gr_viz model generated from create_grviz to create plot from that directly
graph_options	a named list of graphviz graph attributes
node_options	a named list of graphviz node attributes
edge_options	a named list of graphviz edge attributes
stand	Should the coefficients being used be standardized coefficients
...	Additional arguments to be passed to create_grviz for creating edges

Value

A Diagrammer plot of the path diagram for model

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save_png *Saves a plot as a png*

Description

Saves a plot as a png

Usage

```
save_png(plot, path, width = NULL, height = NULL)
```

Arguments

plot	plot object created by lavaanPlot
path	filename to save the image
width	width of image in pixels, NULL for default
height	height of image, NULL for default

Value

no return value saves plot as png

Examples

```
library(lavaan)
model <- 'mpg ~ cyl + disp + hp
          qsec ~ disp + hp + wt'
fit <- sem(model, data = mtcars)
pl <- lavaanPlot(model = fit)
## Not run:
save_png(pl, "plot.png")

## End(Not run)
```

---

sig_stars *Generates standard significance stars*

Description

Generates standard significance stars

Generates standard significance stars

Usage

```
sig_stars(pvals)

sig_stars(pvals)
```

Arguments

pvals	a vector of p values

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