Document Title

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Last updated: June 28 2022

See [Package References](https://dr-jt.github.io/semoutput/reference/index.html) for help documentation on semoutput functions

# Setup

Required Packages

knitr::opts\_chunk$set(error = TRUE, message = FALSE, warning = TRUE)  
  
library(readr)  
library(here)  
library(dplyr)  
library(lavaan)  
library(psych)  
library(semoutput)  
library(semPlot)  
library(sjPlot)

Import Data

## Import Data  
data <- read\_csv(here("relative file path", "file name"))

## Error: '/Users/ubd/wolke2/utku\_SIVOCS/relative file path/file name' does not exist.

# Descriptives

# Prints basic descriptive statistics  
sem\_descriptives(data)

## Error in UseMethod("gather"): no applicable method for 'gather' applied to an object of class "function"

# Correlation Matrix

# Uses sjPlot to print a nice looking correlation table  
tab\_corr(data, na.deletion = "pairwise", digits = 2, triangle = "lower")

## Error in stats::cor(data, method = corr.method, use = "pairwise.complete.obs"): supply both 'x' and 'y' or a matrix-like 'x'

# EFA

efa\_data <- data  
  
## Determine the number of factors to extract  
VSS.scree(efa\_data)

## Error in if (nvar != dim(rx)[1]) {: argument is of length zero

fa.parallel(efa\_data, fa = "fa")

## Error in UseMethod("isSymmetric"): no applicable method for 'isSymmetric' applied to an object of class "function"

VSS(efa\_data, n = 4, rotate = "varimax")

## Error in if (dim(x)[2] < n) n <- dim(x)[2]: argument is of length zero

## Conduct EFA analysis with nfactors determined from methods above  
efa\_fit <- fa(efa\_data, fm = "pa", nfactors = 3, rotate = "varimax")

## Error in UseMethod("isSymmetric"): no applicable method for 'isSymmetric' applied to an object of class "function"

## Summary Output

efa\_method(efa\_fit)

## Error in efa\_method(efa\_fit): object 'efa\_fit' not found

efa\_var(efa\_fit)

## Error in as.data.frame(fit$Vaccounted): object 'efa\_fit' not found

efa\_loadings(efa\_fit)

## Error in efa\_loadings(efa\_fit): object 'efa\_fit' not found

efa\_rotmatrix(efa\_fit)

## Error in as.data.frame(fit$rot.mat): object 'efa\_fit' not found

## Diagram Output

fa.diagram(efa\_fit)

## Error in fa.diagram(efa\_fit): object 'efa\_fit' not found

## Full Output

efa\_fit

## Error in eval(expr, envir, enclos): object 'efa\_fit' not found

# CFA

See the [lavaan Tutorial](https://lavaan.ugent.be/tutorial/index.html) for model syntax

# specify the model  
model <- '  
# latent factors  
  
# correlated errors  
  
# constraints  
  
'  
# fit the model  
fit <- cfa(model = model, data = data, mimic = "lavaan",   
 estimator = "ML", missing = "ML",   
 std.lv = TRUE, std.ov = FALSE, test = "standard",   
 se = "standard", bootstrap = 1000)

## Error in lavaan::lavaan(model = model, data = data, mimic = "lavaan", : lavaan ERROR: data is a function; it should be a data.frame

## Summary Output

sem\_tables()

## Error in h(simpleError(msg, call)): error in evaluating the argument 'object' in selecting a method for function 'fitMeasures': argument "x" is missing, with no default

## Diagram Output

factors <- fit$pta$vnames$lv[[1]]

## Error in eval(expr, envir, enclos): object 'fit' not found

semPaths(fit, latents = factors, whatLabels = "std", layout = "tree2",   
 rotation = 2, style = "lisrel", optimizeLatRes = TRUE,   
 intercepts = FALSE, residuals = TRUE, curve = 1, curvature = 3,   
 sizeLat = 10, nCharNodes = 8, sizeMan = 11, sizeMan2 = 4,   
 edge.label.cex = 1.2, edge.color = "#000000")

## Error in "semPlotModel" %in% class(object): object 'fit' not found

## Residual Correlation Matrix

sem\_residuals(fit)

## Error in h(simpleError(msg, call)): error in evaluating the argument 'object' in selecting a method for function 'residuals': object 'fit' not found

## Full Output

### Summary

summary(fit, fit.measures = TRUE, standardized = TRUE)

## Error in h(simpleError(msg, call)): error in evaluating the argument 'object' in selecting a method for function 'summary': object 'fit' not found

### Parameter Estimates

standardizedSolution(fit)

## Error in standardizedSolution(fit): object 'fit' not found

### Modification Indices

modificationIndices(fit, sort. = TRUE, minimum.value = 3)

## Error in modificationIndices(fit, sort. = TRUE, minimum.value = 3): object 'fit' not found

# SEM

See the [lavaan Tutorial](https://lavaan.ugent.be/tutorial/index.html) for model syntax

# specify the model  
model <- '  
# latent factors  
  
  
# variances  
  
  
# covariances  
  
  
# regressions  
  
'  
# fit the model  
fit <- sem(model = model, data = data, mimic = "lavaan",   
 estimator = "ML", missing = "ML",   
 std.lv = FALSE, std.ov = FALSE, test = "standard",   
 se = "standard", bootstrap = "standard")

## Error in lavaan::lavaan(model = model, data = data, mimic = "lavaan", : lavaan ERROR: data is a function; it should be a data.frame

## Summary Output

sem\_tables()

## Error in h(simpleError(msg, call)): error in evaluating the argument 'object' in selecting a method for function 'fitMeasures': argument "x" is missing, with no default

## Diagram Output

factors <- fit$pta$vnames$lv[[1]]

## Error in eval(expr, envir, enclos): object 'fit' not found

semPaths(fit, latents = factors, whatLabels = "std", layout = "tree2",   
 rotation = 2, style = "lisrel", optimizeLatRes = TRUE,   
 intercepts = FALSE, residuals = TRUE, curve = 1, curvature = 3,   
 sizeLat = 10, nCharNodes = 8, sizeMan = 11, sizeMan2 = 4,   
 edge.label.cex = 1.2, edge.color = "#000000")

## Error in "semPlotModel" %in% class(object): object 'fit' not found

## Residual Correlation Matrix

sem\_residuals(fit)

## Error in h(simpleError(msg, call)): error in evaluating the argument 'object' in selecting a method for function 'residuals': object 'fit' not found

## Full Output

### Summary

summary(fit, fit.measures = TRUE, standardized = TRUE)

## Error in h(simpleError(msg, call)): error in evaluating the argument 'object' in selecting a method for function 'summary': object 'fit' not found

### Parameter Estimates

standardizedSolution(fit)

## Error in standardizedSolution(fit): object 'fit' not found

### Modification Indices

modificationIndices(fit, sort. = TRUE, minimum.value = 3)

## Error in modificationIndices(fit, sort. = TRUE, minimum.value = 3): object 'fit' not found

# Session Info

citation("lavaan")

To cite lavaan in publications use:  
  
 Yves Rosseel (2012). lavaan: An R Package for Structural Equation  
 Modeling. Journal of Statistical Software, 48(2), 1-36.  
 https://doi.org/10.18637/jss.v048.i02  
  
A BibTeX entry for LaTeX users is  
  
 @Article{,  
 title = {{lavaan}: An {R} Package for Structural Equation Modeling},  
 author = {Yves Rosseel},  
 journal = {Journal of Statistical Software},  
 year = {2012},  
 volume = {48},  
 number = {2},  
 pages = {1--36},  
 doi = {10.18637/jss.v048.i02},  
 }

citation()

To cite R in publications use:  
  
 R Core Team (2022). R: A language and environment for statistical  
 computing. R Foundation for Statistical Computing, Vienna, Austria.  
 URL https://www.R-project.org/.  
  
A BibTeX entry for LaTeX users is  
  
 @Manual{,  
 title = {R: A Language and Environment for Statistical Computing},  
 author = {{R Core Team}},  
 organization = {R Foundation for Statistical Computing},  
 address = {Vienna, Austria},  
 year = {2022},  
 url = {https://www.R-project.org/},  
 }  
  
We have invested a lot of time and effort in creating R, please cite it  
when using it for data analysis. See also 'citation("pkgname")' for  
citing R packages.

sessionInfo()

R version 4.2.1 (2022-06-23)  
Platform: aarch64-apple-darwin20 (64-bit)  
Running under: macOS Monterey 12.4  
  
Matrix products: default  
BLAS: /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRblas.0.dylib  
LAPACK: /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRlapack.dylib  
  
locale:  
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attached base packages:  
[1] stats graphics grDevices utils datasets methods base   
  
other attached packages:  
[1] sjPlot\_2.8.10 semPlot\_1.1.5 semoutput\_1.0.2 psych\_2.2.5   
[5] lavaan\_0.6-11 dplyr\_1.0.9 here\_1.0.1 readr\_2.1.2   
  
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