Package 'pathmodelfit'

October 14, 2022

Type Package

Title Path Component Fit Indices for Latent Structural Equation Models

Version 1.0.5

Description Functions for computing fit indices for
evaluating the path component of latent variable structural equation models.
Available fit indices include RMSEA-P and NSCI-P originally presented and evaluated
by Williams and O'Boyle (2011) <doi:10.1177/1094428110391472> and demonstrated by
O'Boyle and Williams (2011) <doi:10.1037/a0020539> and Williams, O'Boyle, & Yu (2020)
<doi:10.1177/1094428117736137>. Also included are fit indices described by
Hancock and Mueller (2011) <doi:10.1177/0013164410384856>.

License GPL-3

Depends lavaan

Encoding UTF-8

LazyData true

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NeedsCompilation no

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pathmodelfit-package   *pathmodelfit: Path Component Fit Indices for Latent Structural Equation Models*

Description

Functions for computing fit indices for evaluating the path component of latent variable structural equation models. Available fit indices include RMSEA-P and NSCI-P originally presented and evaluated by Williams and O'Boyle (2011) <doi:10.1177/1094428110391472> and demonstrated by O'Boyle and Williams (2011) <doi:10.1037/a0020539> and Williams, O'Boyle, & Yu (2020) <doi:10.1177/1094428117736137>. Also included are fit indices described by Hancock and Mueller (2011) <doi:10.1177/0013164410384856>.

Author(s)

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Authors:

  • Larry Williams <larry.williams@ttu.edu>

References

Hancock, G. R., & Mueller, R. O. (2011). The reliability paradox in assessing structural relations within covariance structure models. Educational and Psychological Measurement, 71(2), 306-324.

McNeish, D., & Hancock, G. R. (2018). The effect of measurement quality on targeted structural model fit indices: A comment on Lance, Beck, Fan, and Carter (2016). Psychological Methods, 23(1), 184–190. https://doi.org/10.1037/met0000157

O'Boyle, E. H., Jr., & Williams, L. J. (2011). Decomposing model fit: Measurement vs. theory in organizational research using latent variables. Journal of Applied Psychology, 96(1), 1–12. https://doi.org/10.1037/a0020539

Williams, L. J., & O'Boyle, E. H. (2011). The myth of global fit indices and alternatives for assessing latent variable relations. Organizational Research Methods, 14, 350-369.

Williams, L. J., O'Boyle, E. H., & Yu, J. (2020). Condition 9 and 10 tests of model confirmation: A review of James, Mulaik, and Brett (1982) and contemporary alternatives. Organizational Research Methods, 23, 1, 6-29.

Examples

```
library(lavaan)

model4 <- '
Ldrrew =~ LdrrewI1 + LdrrewI2 + LdrrewI3
Jobcom =~ JobcomI1 + JobcomI2 + JobcomI3
Jobsat =~ JobsatI1 + JobsatI2 + JobsatI3
Orgcom =~ OrgcomI1 + OrgcomI2 + OrgcomI3
Jobsat ~ Ldrrew + Jobcom
```

```
Orgcom ~ Jobsat'

data(mediationVC)

fit <- sem(model4, sample.cov = mediationVC, sample.nobs = 232)
pathmodelfit(fit)
```

---

mediationVC   *Williams and Anderson (1994) Mediated Multifoci Model Dataset*

Description

This data set is from Williams and Anderson (1994) on the study of methods effects in organizational research using latent-variable models.

Usage

```
mediationVC
```

Format

A variance-covariance `matrix` for 232 observations and 12 variables. The variables are indicators of four constructss: 1) job satisfaction (Jobsat; 10 items), 2) organizational committment (Orgcom; 8 items), 3) leader-contingent reward behavior (Ldrrew; 10 items), and 4) job complexity (Jobcom; 6 items). The individual item responses were used to create three, total-score indicators for each construct defined as follows:

JobsatI1 Job satisfaction indicator 1

JobsatI2 Job satisfaction indicator 2

JobsatI3 Job satisfaction indicator 3

OrgcomI1 Organizational committment indicator 1

OrgcomI2 Organizational committment indicator 2

OrgcomI3 Organizational committment indicator 3

LdrrewI1 Leader-contingent reward behavior indicator 1

LdrrewI2 Leader-contingent reward behavior indicator 2

LdrrewI3 Leader-contingent reward behavior indicator 3

JobcomI1 Job complexity indicator 1

JobcomI2 Job complexity indicator 2

JobcomI3 Job complexity indicator 3

Author(s)

Steven Culpepper and Larry Williams

Source

Williams, L. J. & Anderson, S. E. (1994). An alternative approach to method effects by using latent-variable models: Applications in organizational behavior research. Journal of Applied Psychology, 79, 323-331.

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pathmodelfit   *Compute fit indices for the path component of latent variable structural equation models.*

Description

`pathmodelfit` computes fit indices for evaluating the path component of latent variable structural equation models. Available fit indices include RMSEA-P and NSCI-P originally presented and evaluated by Williams and O'Boyle (2011) and demonstrated by O'Boyle and Williams (2011) and Williams, O'Boyle, & Yu, (2019). Also included are fit indices described by Hancock and Mueller (2011).

Usage

```
pathmodelfit(lavaanoutput)
```

Arguments

lavaanoutput   A lavaan sem object.

Value

A vector with RMSEA-P, a p-value for the chi-square test comparing the theoretical and saturated model, a 90 percent confidence interval for RMSEA-P, NSCI-P, and SRMRs, RMSEAs, TLIs, and CFIs.

References

Hancock, G. R., & Mueller, R. O. (2011). The reliability paradox in assessing structural relations within covariance structure models. Educational and Psychological Measurement, 71(2), 306-324.

McNeish, D., & Hancock, G. R. (2018). The effect of measurement quality on targeted structural model fit indices: A comment on Lance, Beck, Fan, and Carter (2016). Psychological Methods, 23(1), 184–190. https://doi.org/10.1037/met0000157

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