McDonald's Omega

R-Pakete

```
library(psych)
library(tidyverse)
```

```
── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──
✔ dplyr     1.1.2     ✔ readr     2.1.4
✔ forcats   1.0.0     ✔ stringr   1.5.0
✔ ggplot2   3.4.2     ✔ tibble    3.2.1
✔ lubridate 1.9.2     ✔ tidyr     1.3.0
✔ purrr     1.0.1
── Conflicts ────────────────────────────────────────── tidyverse_conflicts() ──
✖ ggplot2::%+%()   masks psych::%+%()
✖ ggplot2::alpha() masks psych::alpha()
✖ dplyr::filter()  masks stats::filter()
✖ dplyr::lag()     masks stats::lag()
ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts
to become errors
```

```
library(haven)
```

Daten

```
fmi <- read_sav("Achtsamkeit_Daten_FFAEichung_rekodiert_2.sav")

names(fmi)
```

```
 [1] "Nummer"          "STATUS"          "Einwilligung"    "Alter"
 [5] "Geschlecht"      "Bildung"         "Haushaltsgrösse" "Religion"
 [9] "Evang"           "Islam"           "Judentum"        "keineRel"
[13] "Andere_Religion" "feste_Stelle"    "Einkommen"       "PHQ_1"
[17] "PHQ_2"           "PHQ_3"           "PHQ_4"           "Kursteilnahme"
[21] "tägl_Übung"      "Achts_regel"     "Vip_regel"       "Zen_regel"
[25] "TM_regel"        "Kontemp_regel"   "Yoga_regel"      "TaiChi_regel"
[29] "ChiGong_regel"   "Tantra_regel"    "Ander_regel"     "Anderes"
[33] "Praxisjahre"     "Retreats"        "Theorie"         "FFA_1"
[37] "FFA_2"           "FFA_3"           "FFA_4"           "FFA_5"
[41] "FFA_6"           "FFA_7"           "FFA_8"           "FFA_9"
[45] "FFA_10"          "FFA_11"          "FFA_12"          "FFA_13_rek"
[49] "FFA_14"          "Presence"        "Acceptance"      "Summe"
[53] "Acceptance13"    "SummeFFA13"      "PHQ_Sum"         "Filter"
```

Omega für die Generalfaktorlösung mit 13 Items

```r
fmi_items <-
  fmi %>%
  select(FFA_1:FFA_13_rek)

fmi_items %>%
  omega(nfactors = 1)
```

```
Loading required namespace: GPArotation

Omega_h for 1 factor is not meaningful, just omega_t

Warning in schmid(m, nfactors, fm, digits, rotate = rotate, n.obs = n.obs, :
Omega_h and Omega_asymptotic are not meaningful with one factor

Omega
Call: omegah(m = m, nfactors = nfactors, fm = fm, key = key, flip = flip,
    digits = digits, title = title, sl = sl, labels = labels,
    plot = plot, n.obs = n.obs, rotate = rotate, Phi = Phi, option = option,
    covar = covar)
Alpha:                 0.86
G.6:                   0.86
Omega Hierarchical:    0.87
Omega H asymptotic:    1
Omega Total            0.86

Schmid Leiman Factor loadings greater than  0.2
              g  F1*   h2   u2 p2
FFA_1      0.53      0.28 0.72  1
FFA_2      0.51      0.26 0.74  1
FFA_3      0.49      0.24 0.76  1
FFA_4      0.61      0.37 0.63  1
FFA_5      0.68      0.46 0.54  1
FFA_6      0.65      0.43 0.57  1
FFA_7      0.69      0.47 0.53  1
FFA_8      0.54      0.29 0.71  1
FFA_9      0.65      0.42 0.58  1
FFA_10     0.68      0.46 0.54  1
FFA_11     0.67      0.45 0.55  1
FFA_12     0.65      0.42 0.58  1
FFA_13_rek           0.00 1.00  1

With Sums of squares  of:
  g F1*
4.5 0.0

general/max  3.592149e+16   max/min =   1
mean percent general =  1    with sd =  0 and cv of  0
Explained Common Variance of the general factor =  1

The degrees of freedom are 65  and the fit is  0.37
The number of observations was  1012  with Chi Square =  376.13  with prob <  2.4e-45
The root mean square of the residuals is  0.05
The df corrected root mean square of the residuals is  0.05
```

```
RMSEA index =  0.069  and the 10 % confidence intervals are  0.062 0.076
BIC =  -73.65

Compare this with the adequacy of just a general factor and no group factors
The degrees of freedom for just the general factor are 65  and the fit is  0.37
The number of observations was  1012  with Chi Square =  376.13  with prob <  2.4e-45
The root mean square of the residuals is  0.05
The df corrected root mean square of the residuals is  0.05

RMSEA index =  0.069  and the 10 % confidence intervals are  0.062 0.076
BIC =  -73.65

Measures of factor score adequacy
                                                 g F1*
Correlation of scores with factors            0.94   0
Multiple R square of scores with factors      0.88   0
Minimum correlation of factor score estimates 0.77  -1

 Total, General and Subset omega for each subset
                                                  g  F1*
Omega total for total scores and subscales    0.86 0.87
Omega general for total scores and subscales  0.87 0.87
Omega group for total scores and subscales    0.00 0.00
```

Omega für Präsenz

```
pres_items <-
  fmi %>%
  select(FFA_1, FFA_2, FFA_3, FFA_5, FFA_7, FFA_10)


pres_items %>%
  omega(nfactors = 1)
```

```
Omega_h for 1 factor is not meaningful, just omega_t

Warning in schmid(m, nfactors, fm, digits, rotate = rotate, n.obs = n.obs, :
Omega_h and Omega_asymptotic are not meaningful with one factor

Omega
Call: omegah(m = m, nfactors = nfactors, fm = fm, key = key, flip = flip,
    digits = digits, title = title, sl = sl, labels = labels,
    plot = plot, n.obs = n.obs, rotate = rotate, Phi = Phi, option = option,
    covar = covar)
Alpha:                 0.78
G.6:                   0.76
Omega Hierarchical:    0.79
Omega H asymptotic:    1
Omega Total            0.79

Schmid Leiman Factor loadings greater than  0.2
          g  F1*   h2   u2 p2
```

```
FFA_1  0.55      0.30 0.70  1
FFA_2  0.58      0.34 0.66  1
FFA_3  0.55      0.31 0.69  1
FFA_5  0.68      0.46 0.54  1
FFA_7  0.67      0.45 0.55  1
FFA_10 0.66      0.43 0.57  1

With Sums of squares  of:
  g F1*
2.3 0.0

general/max  2.059306e+16   max/min =   1
mean percent general =  1    with sd =  0 and cv of  0
Explained Common Variance of the general factor =  1

The degrees of freedom are 9  and the fit is  0.06
The number of observations was  1012  with Chi Square =  58.39  with prob <  2.7e-09
The root mean square of the residuals is  0.04
The df corrected root mean square of the residuals is  0.05
RMSEA index =  0.074  and the 10 % confidence intervals are  0.056 0.092
BIC =  -3.88

Compare this with the adequacy of just a general factor and no group factors
The degrees of freedom for just the general factor are 9  and the fit is  0.06
The number of observations was  1012  with Chi Square =  58.39  with prob <  2.7e-09
The root mean square of the residuals is  0.04
The df corrected root mean square of the residuals is  0.05

RMSEA index =  0.074  and the 10 % confidence intervals are  0.056 0.092
BIC =  -3.88

Measures of factor score adequacy
                                                 g F1*
Correlation of scores with factors            0.89   0
Multiple R square of scores with factors      0.79   0
Minimum correlation of factor score estimates 0.58  -1

 Total, General and Subset omega for each subset
                                                 g  F1*
Omega total for total scores and subscales    0.79 0.79
Omega general for total scores and subscales  0.79 0.79
Omega group for total scores and subscales    0.00 0.00
```

Omega für Akzeptanz

```
acc_items <-
  fmi %>%
  select(FFA_4, FFA_6, FFA_8, FFA_9, FFA_11, FFA_12, FFA_14)

acc_items %>%
  omega(nfactors = 1)
```

```
Omega_h for 1 factor is not meaningful, just omega_t

Warning in schmid(m, nfactors, fm, digits, rotate = rotate, n.obs = n.obs, :
Omega_h and Omega_asymptotic are not meaningful with one factor

Omega
Call: omegah(m = m, nfactors = nfactors, fm = fm, key = key, flip = flip,
    digits = digits, title = title, sl = sl, labels = labels,
    plot = plot, n.obs = n.obs, rotate = rotate, Phi = Phi, option = option,
    covar = covar)
Alpha:                 0.82
G.6:                   0.8
Omega Hierarchical:    0.82
Omega H asymptotic:    1
Omega Total            0.82

Schmid Leiman Factor loadings greater than  0.2
          g  F1*   h2   u2 p2
FFA_4  0.63      0.40 0.60  1
FFA_6  0.67      0.44 0.56  1
FFA_8  0.50      0.25 0.75  1
FFA_9  0.70      0.49 0.51  1
FFA_11 0.68      0.47 0.53  1
FFA_12 0.68      0.46 0.54  1
FFA_14 0.56      0.31 0.69  1

With Sums of squares  of:
  g F1*
2.8 0.0

general/max  3.381705e+16   max/min =   1
mean percent general =  1    with sd =  0 and cv of  0
Explained Common Variance of the general factor =  1

The degrees of freedom are 14  and the fit is  0.05
The number of observations was  1012  with Chi Square =  49.67  with prob <  6.9e-06
The root mean square of the residuals is  0.03
The df corrected root mean square of the residuals is  0.04
RMSEA index =  0.05  and the 10 % confidence intervals are  0.036 0.066
BIC =  -47.21

Compare this with the adequacy of just a general factor and no group factors
The degrees of freedom for just the general factor are 14  and the fit is  0.05
The number of observations was  1012  with Chi Square =  49.67  with prob <  6.9e-06
The root mean square of the residuals is  0.03
The df corrected root mean square of the residuals is  0.04

RMSEA index =  0.05  and the 10 % confidence intervals are  0.036 0.066
BIC =  -47.21

Measures of factor score adequacy
                                                 g F1*
Correlation of scores with factors            0.91   0
Multiple R square of scores with factors      0.83   0
```

```
Minimum correlation of factor score estimates 0.66  -1

 Total, General and Subset omega for each subset
                                                      g  F1*
Omega total for total scores and subscales         0.82 0.82
Omega general for total scores and subscales       0.82 0.82
Omega group for total scores and subscales         0.00 0.00
```